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INDUSTRIAL MEDICINE

Industrial Health, Occupational Medicine and Traumatic Surgery

July, 1946

Emotional First Aid Stations
— The Psychiatrist, and the Medical Department —

Color Vision in Industry
— Employee Classification —

The Subclavian Structures
— A Practical Approach to Their Surgery —

Tetryl Exposure
— Analysis of Four Years of Medical Experience —

Personality Problems
— In Managerial Groups —

Industrial Hygiene Programs
— Expansion in Official Agencies —

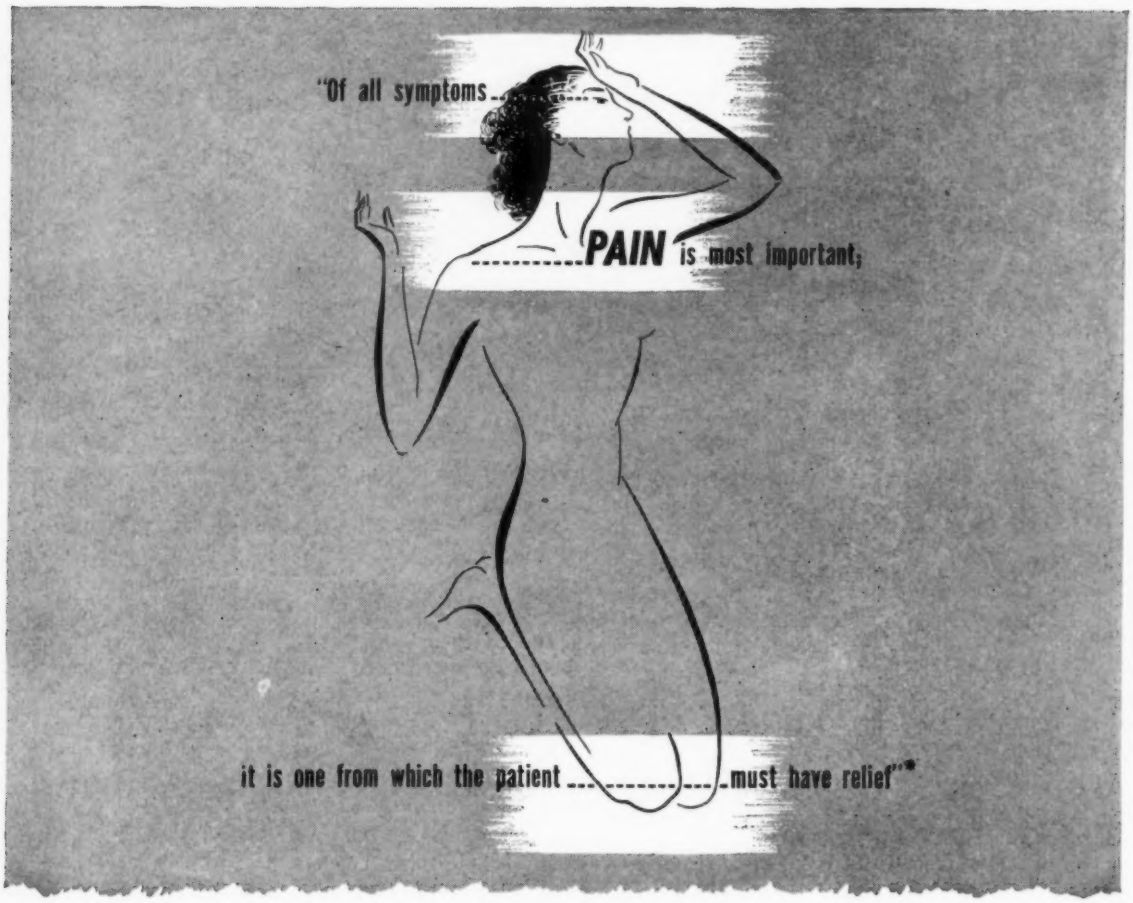
The Present Status of Penicillin
— And the Newer Antibiotics —

Traumatic Rupture of a Cardiac Valve
— Report of a Case —

Cardiovascular Impairments
— In the Industrial Worker —

The Ramazzini Society
— First Meeting —

Volume 15 Number 7



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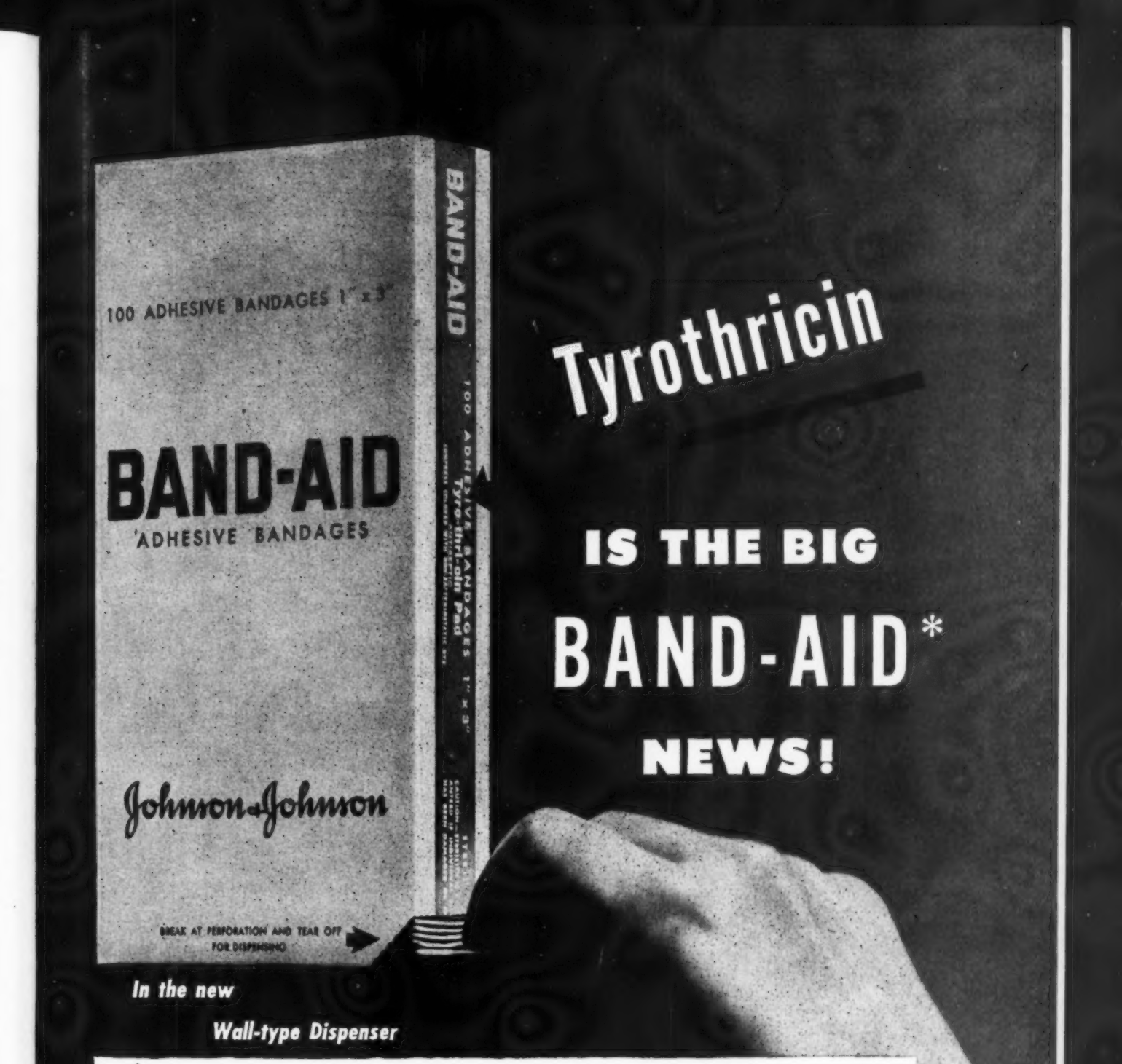

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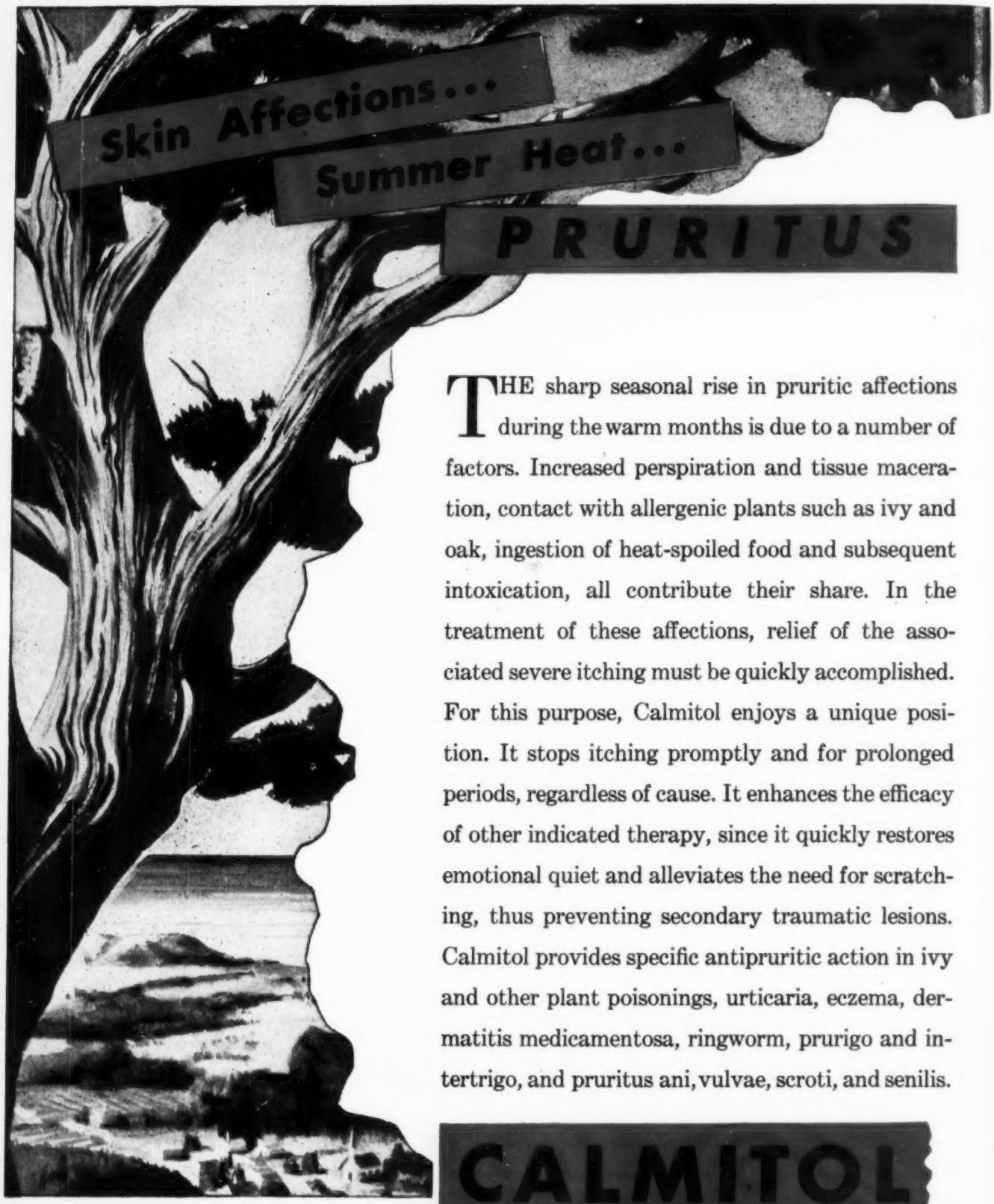

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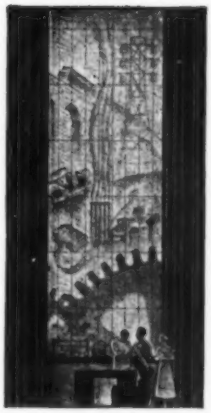

INDUSTRIAL HYGIENE
INDUSTRIAL MEDICINE
& RAILROAD SURGERY

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(School of Occupational Health, Wayne University)

Congress on Industrial Health

The Seventh Annual Congress on Industrial Health, under the sponsorship of the A. M. A. Council on Industrial Health, will be held at the Copley-Plaza Hotel, Boston, Massachusetts, September 30 through October 3, 1946.

American Association of Railway Surgeons

The 57th Annual Meeting of the American Association of Railway Surgeons will be held at the Hotel Sherman, Chicago, October 29-30-31, 1946.

INDUSTRIAL MEDICINE is now a Member of the AUDIT BUREAU OF CIRCULATIONS. . . . OUR (mis)information in last month's column to the effect that DR. LEONARD GREENBURG had been appointed Health Commissioner of New York City was contained in an item in the *Chicago Daily News*. The appointment went to DR. ISRAEL WEINSTEIN, of Brooklyn, who was named by the Mayor on May 24. . . . THE Seventh Annual Congress on Industrial Health will be held in Boston this year—September 30 through October 3. The A.M.A. announcement wisely suggests "make hotel and transportation plans as early as possible". . . . INTERESTING to note that the AMERICAN ASSOCIATION OF RAILWAY SURGEONS, which will hold its 57th Annual Meeting in Chicago, October 29-31, was founded in 1888. . . . DR. STREBEL'S "Color Vision in Industry" (page 425) does *not* confirm the prevalent opinion regarding the color vision relationship between men and women. . . . DR. C. N. FISCHER and H. D. MURDOCK, in their "Analysis of Four Years of Medical Experience with Tetryl Exposure," (page 428), reach the important conclusion that "tetryl exposure has resulted in no systemic disease in our experience." Their experience embraced 3,807 cases of tetryl dermatitis and 1,962 cases in the "non-dermatitis group presenting complaints possibly due to tetryl." This article is the follow-up of their "Industrial Illness Due to Tetryl," in *J.A.M.A.*, August 22, 1942. . . . DR. CONNELL'S "Cardiovascular Impairments in the Industrial Worker" (page 442) had two references which a last-minute review of these pages reveals were crowded out. They were KRESKY and GOLDWATER: "Occupational Potentialities of Cardiac Patients," *Am. Heart J.*, 27:634, 1944, and DOCK: "Atherosclerosis and the Coronary Arteries," *Univ. Hosp. Bull.*, Ann Arbor, 10:27, 1944.

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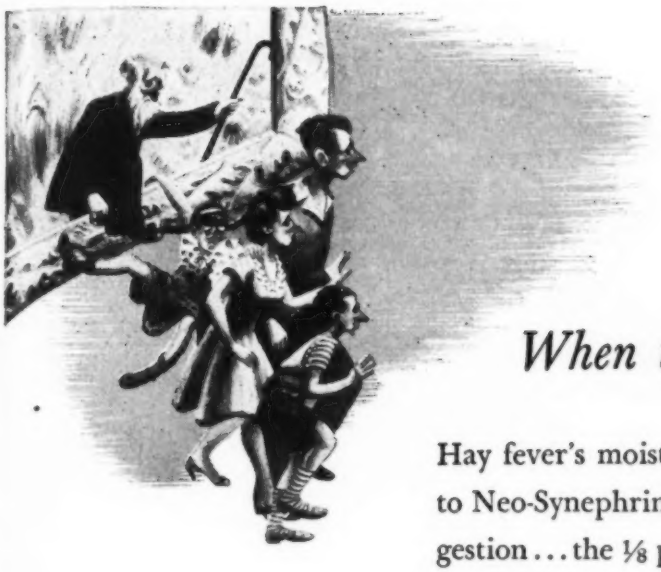

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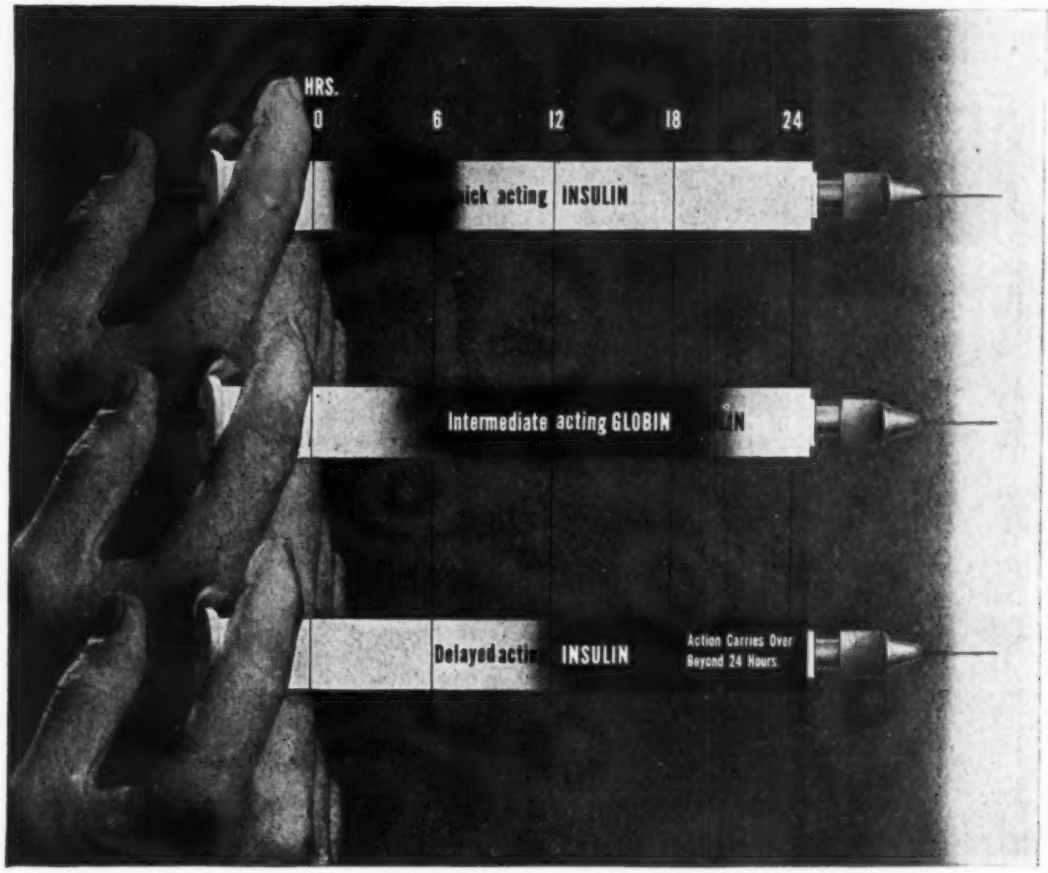

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PERSONAL

JOHN M. KIMMICH, M.D., recently returned from military service, has been appointed Medical Director at the Wilmington Plant, Buick-Oldsmobile-Pontiac Corporation, Wilmington, Delaware.

DR. FRANK L. FISHER, formerly of Mobile, Alabama, has assumed his duties as plant physician, taking over the direction of the Ingalls hospital and the entire medical program among employees of the Ingalls Shipbuilding Corporation, Pascagoula, Mississippi. With long experience in the field of industrial medicine, his chief interest for a number of years, Dr. Fisher comes to the Ingalls staff from the Alabama Dry Dock & Shipbuilding Company in Mobile, where he served for two and a half years as company physician. Prior to that service he was connected with an industrial concern in the British Isles, where he worked for two years. A native of Nova Scotia, he is a graduate of the medical school of McGill University in Montreal, Canada, having received his degree in 1924. Since his graduation he has done research work in the field of internal medicine at Cornell University, Ithaca, New York.

DR. REX H. WILSON, of Akron, Ohio, has been appointed medical director of the B. F. Goodrich Company, succeeding DR. DONALD B. LOWE who died March 2. DR. WILSON practiced diagnosis and internal medicine in Akron for five years before entering military service. He was graduated from Ohio Wesleyan University in 1931 and Ohio State University Medical School in 1935. He served his internship at the Presbyterian hospital, Chicago, where he became resident physician in medicine and instructor at Rush Medical College. He also had post-graduate work at the Mayo Clinic, Rochester, Minnesota. He joined the Army Medical Corps in 1942, serving for 45 months as Chief of Industrial Medical Branch, Fifth Service Command, then in the Southwest Pacific attached to the 20th Air Forces and later as commanding officer of the 118 station hospital in Sasebo, Japan, with the rank of major. He is a member of the staff at both Akron City and Peoples hospitals, Diplomate of the American Board of Internal Medicine, member of the AMERICAN ASSOCIATION OF INDUSTRIAL PHYSICIANS AND SURGEONS, the American College of Military Sur-

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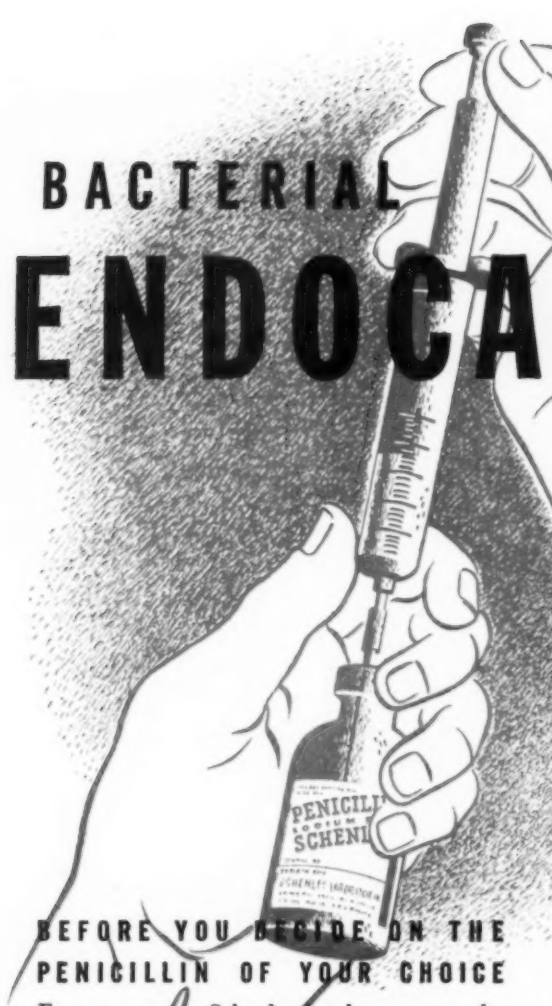

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DAWSON, M. H., AND HUNTER, T. H.: *The Treatment of Subacute Bacterial Endocarditis with Penicillin: Results in Twenty Cases, J.A.M.A. 127:129 (Jan. 20) 1945...* FAVOUR, C. B.; JANEWAY, C. A.; GIBSON, J. G., II, AND LEVINE, S. A.: *Progress in the Treatment of Subacute Bacterial Endocarditis, New England J. Med. 234:71 (Jan. 17) 1946.*

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geons, the Summit County, the Ohio and the American Medical Associations, and the Medical Round Table.

DR. CLIFFORD H. KEENE has been appointed medical director for Kaiser-Frazer Corporation and Graham-Paige Motors Corporation, and, as assistant to DR. KEENE, DR. WILBUR E. DOLFIN has been appointed plant physician. DR. KEENE, a graduate of the University of Michigan School of Medicine, is a fellow of the American College of Surgeons and is certified by the American Board of Surgery. He completed his internship and post-graduate work at the U. of M. Hospital. A consultant in the surgery of cancer for the University of Michigan, the State Department of Health and the State Medical Society, he practiced general surgery in Wyandotte, Michigan, before entering the Army in May, 1942. As a Lieutenant-Colonel, he served as surgical consultant for the 26th Hospital Center, a 10,000-bed hospital in Luzon, and later became surgical consultant for Korea. DR. DOLFIN, a graduate of the Boston University School of Medicine, was in private practice as a physician and surgeon for five years. Entering the Army in 1942, he handled medical and industrial civil service work until his recent release.

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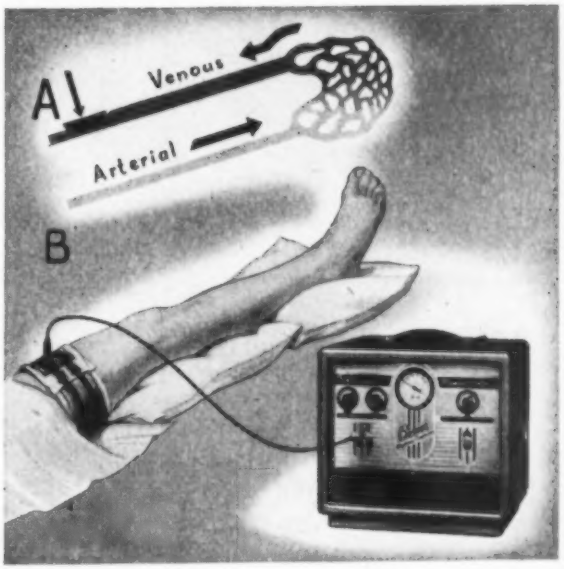

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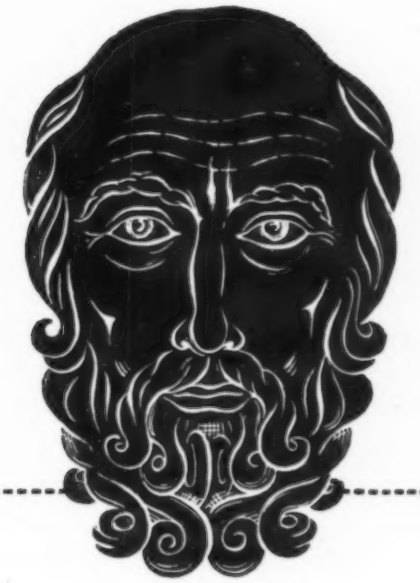

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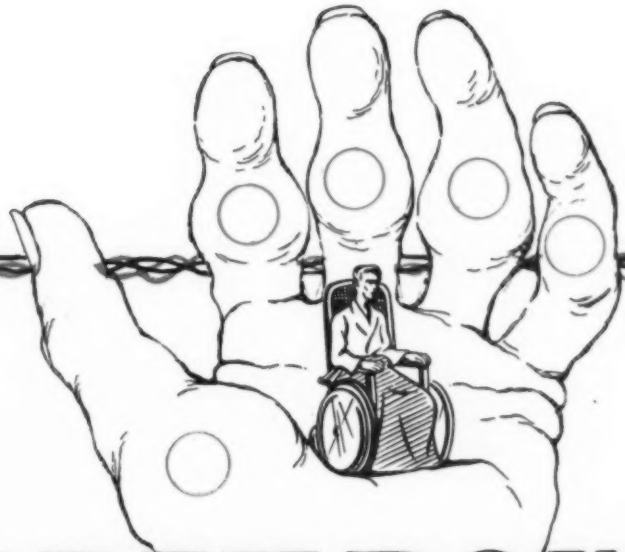

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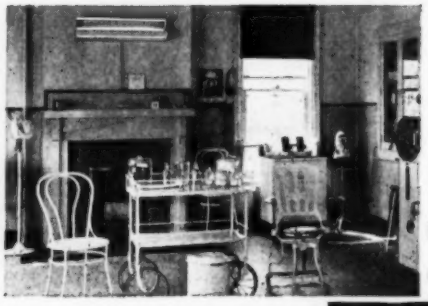

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1. Lehr, D.: Proc. Soc. Exper. Biol. & Med. 58:11, 1945.
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Protein	7.1 Gm.
Fat	5.0 Gm.
Carbohydrate	33 Gm.
Calcium	156 mg.
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Thiamine	0.17 mg.
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*Ann. of Surg. 117:885 (June) 1943.

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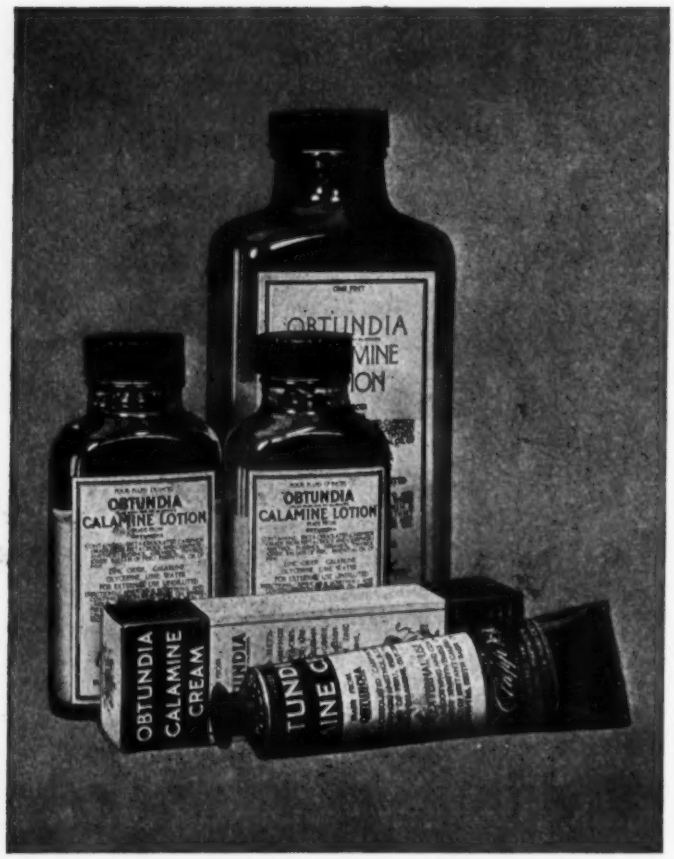

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IN 1936, ten years ago, Machlett introduced the Thermax—the first shockproof X-ray tube to combine in one unit radiographic, superficial and intermediate therapy applications. During the years since, it has made an outstanding contribution in these fields, giving the user a broadened field of techniques with minimum investment. The demand for tubes of this type or units of similar design offering even greater capacity, has been beyond our early expectations. As a result of this extensive experience, much additional knowledge was gained, which has enabled Machlett to completely redesign the tube. All the newest improvements have been incorporated without changing the external dimensions, and thus the tube can be used as a replacement in your present equipment.

The same small-sized housing is retained, rotatable through 360°. Strength has been increased at vital points. The new features increase the ruggedness and improve the function of the mechanical and electrical internal structures.

COOLING: Heat dissipation is substantially increased. Two models: water-cooled and oil-cooled. Latter now features a new system of supplying the oil in a highly efficient jet discharge. Metal in cooling system is corrosion-proof super-nickel.

INSERT: Redesigned for more efficient operation. Closed hood with beryllium window surrounds target; space within tube is field-free, minimizing wall bombardment and stem radiation.

SHIELD: Ray-proofing by a heavy copper hood. A lead-loaded bakelite shield insures greater electrical stability and inhibits internal scattering.

Full details of this outstanding contribution to an important and growing field will be sent on request. Write Machlett Laboratories, Inc., Springdale, Connecticut.

140 PKV Thermax—20° target angle
Single focus—B or C-plus focal spot
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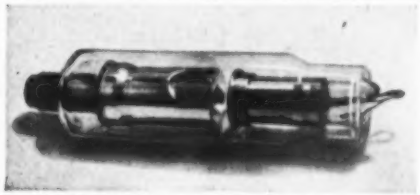
140 PKV Thermax—45° target angle
Single focus. Design for therapy loads only. Available in either a water-cooled or forced-oil-cooled model.



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MACHLETT

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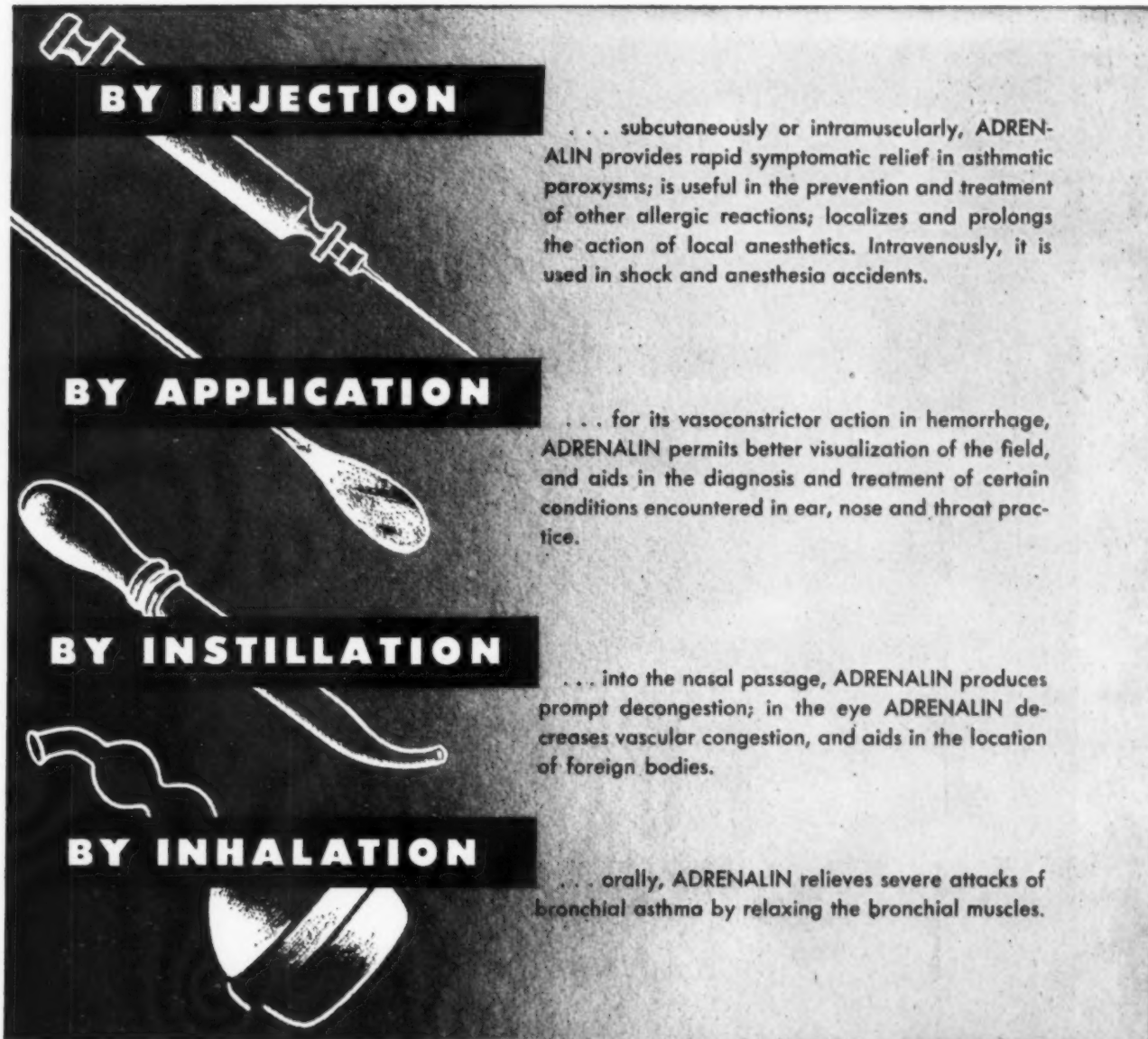

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. . . subcutaneously or intramuscularly, ADRENALIN provides rapid symptomatic relief in asthmatic paroxysms; is useful in the prevention and treatment of other allergic reactions; localizes and prolongs the action of local anesthetics. Intravenously, it is used in shock and anesthesia accidents.

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*Copy of findings available on request.

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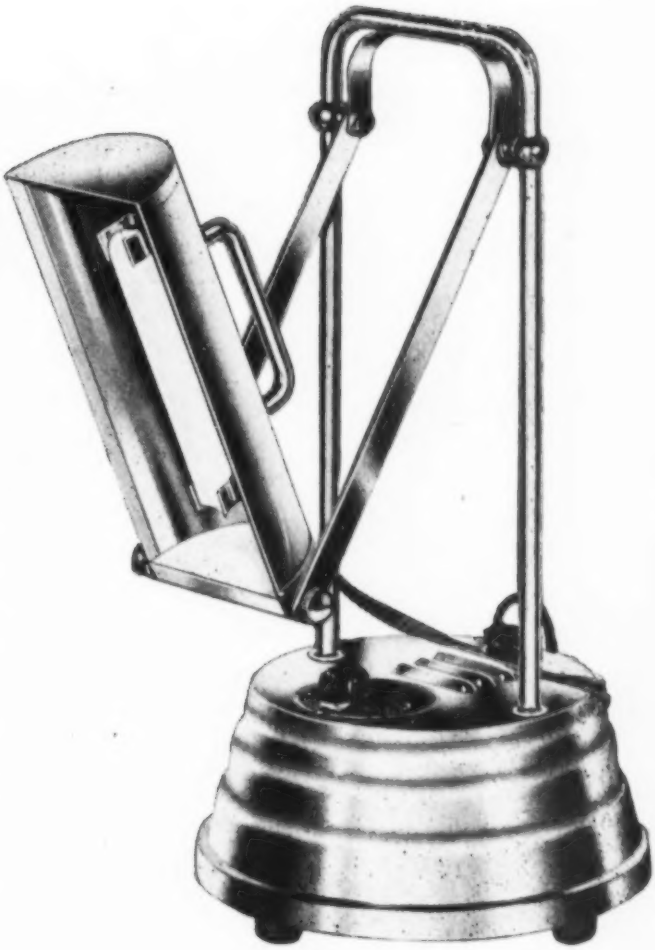

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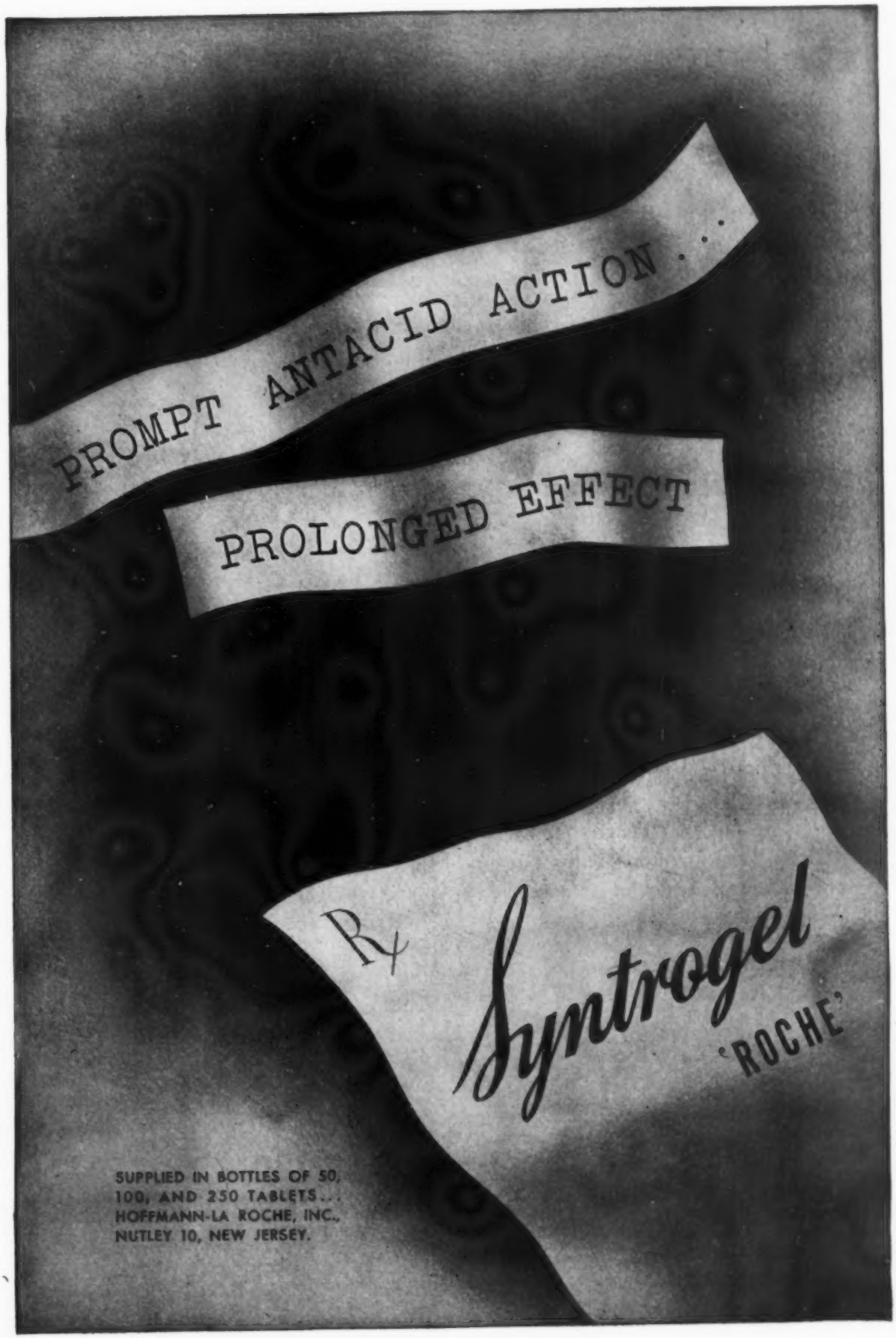
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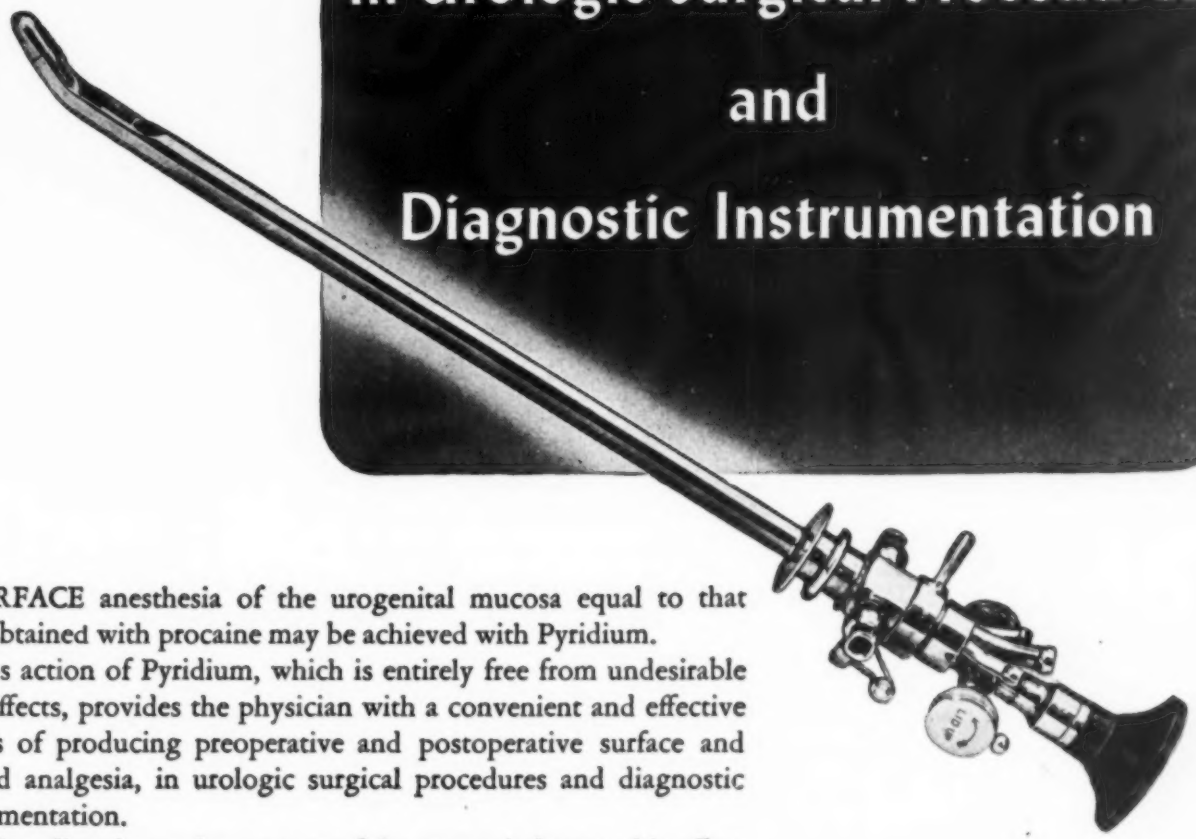
CALCIUM	1.12 Gm.	VITAMIN C	39.6 mg.
PHOSPHORUS	0.939 Gm.	VITAMIN D	417 I.U.
IRON	12.0 mg.	COPPER	0.50 mg.

*Based on average reported values for milk.

Effective Urogenital Analgesia in Urologic Surgical Procedures and Diagnostic Instrumentation



SURFACE anesthesia of the urogenital mucosa equal to that obtained with procaine may be achieved with Pyridium.

This action of Pyridium, which is entirely free from undesirable side-effects, provides the physician with a convenient and effective means of producing preoperative and postoperative surface and wound analgesia, in urologic surgical procedures and diagnostic instrumentation.

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The lack of toxicity characteristic of Pyridium permits its administration virtually without consideration of toxic effects.

Pyridium imparts an orange-red color to the urine. It also temporarily stains the urogenital mucosa, which may at times make it more difficult to detect inflammatory and other changes.

For cystoscopy, cystoscopic diagnostic procedures, and for urethral medication, one ounce of Pyridium Solution is injected into the urethra and bladder and held in place with the urethral clamp for a 10-minute period. The solution then is released and a repeat injection of 15 cc. is made and retained for 5 minutes.

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REG. U. S. PAT. OFF.
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For gratifying relief of distressing symptoms in urogenital infections.

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. . . and possibly she may— for the amazing strides of medical science have added years to life expectancy

● It's a fact—a warm, wonderful fact—that this five-year-old child, or your own child, has a life expectancy almost a whole decade longer than was her mother's, and a good 18 to 20 years longer than that of her grandmother. Not only the expectation of a longer life, but of a life by far healthier. Thank medical science for that. Thank your doctor and thousands like him . . . toiling ceaselessly . . . that you may enjoy a better life.

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better management of menstrual hygiene
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FOR BETTER PROTECTIVE MANAGEMENT
TAMPAX INCORPORATED
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Please send me a professional supply of the three absorbencies of Tampax—together with literature, including a summary of 6500 cases.
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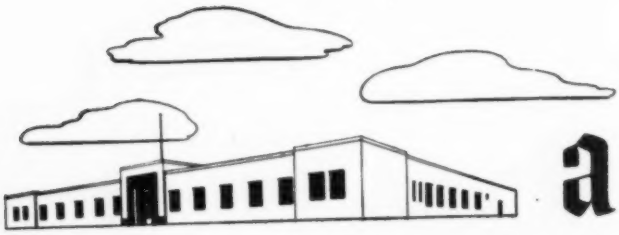
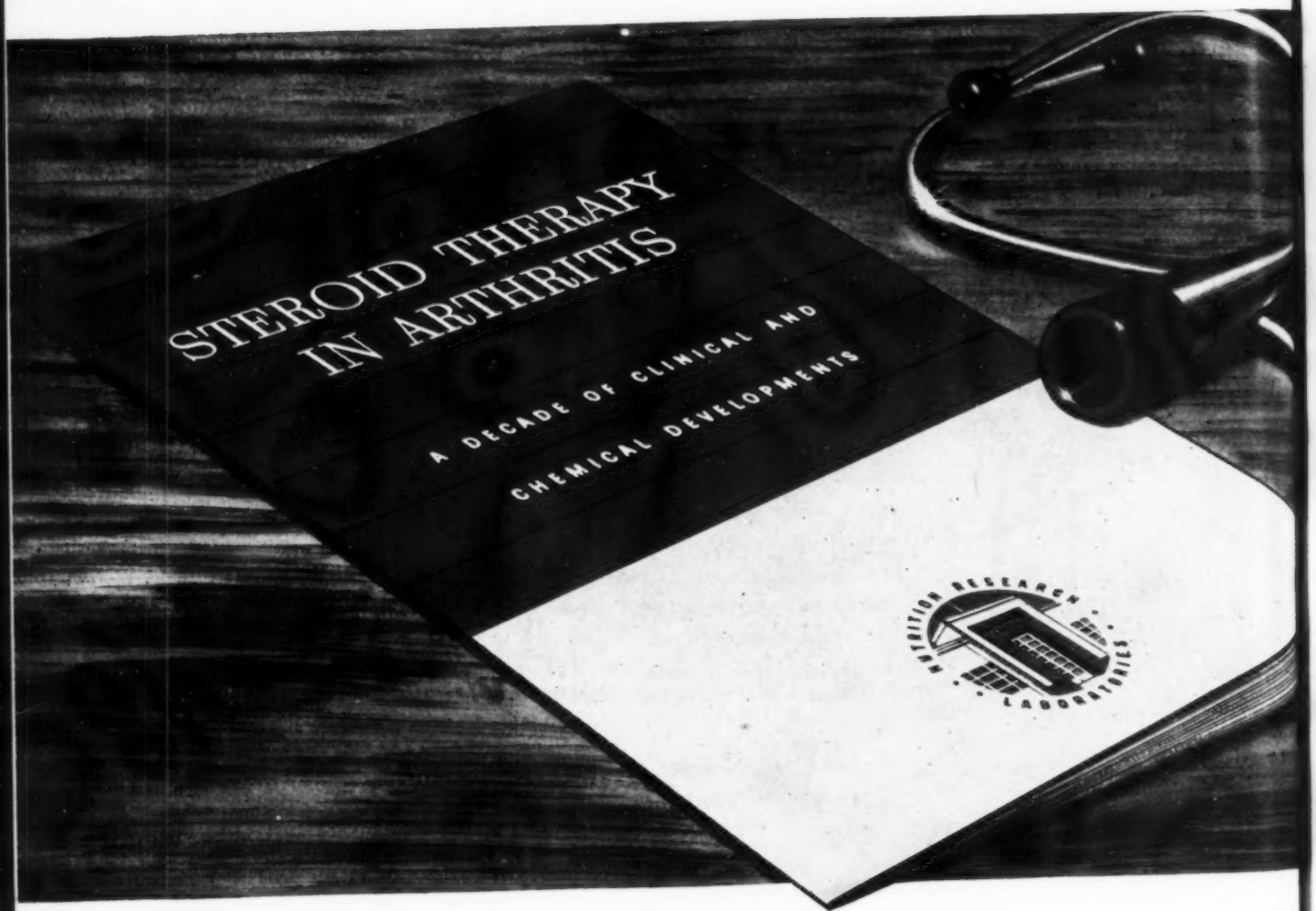


a decade



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This book, prepared by the Medical and Chemical Research Departments of Nutrition Research Laboratories, brings the literature on the subject up to date, and describes the therapeutic and chemical uniqueness of Ertron—steroid complex, Whittier. A complete bibliography is included.

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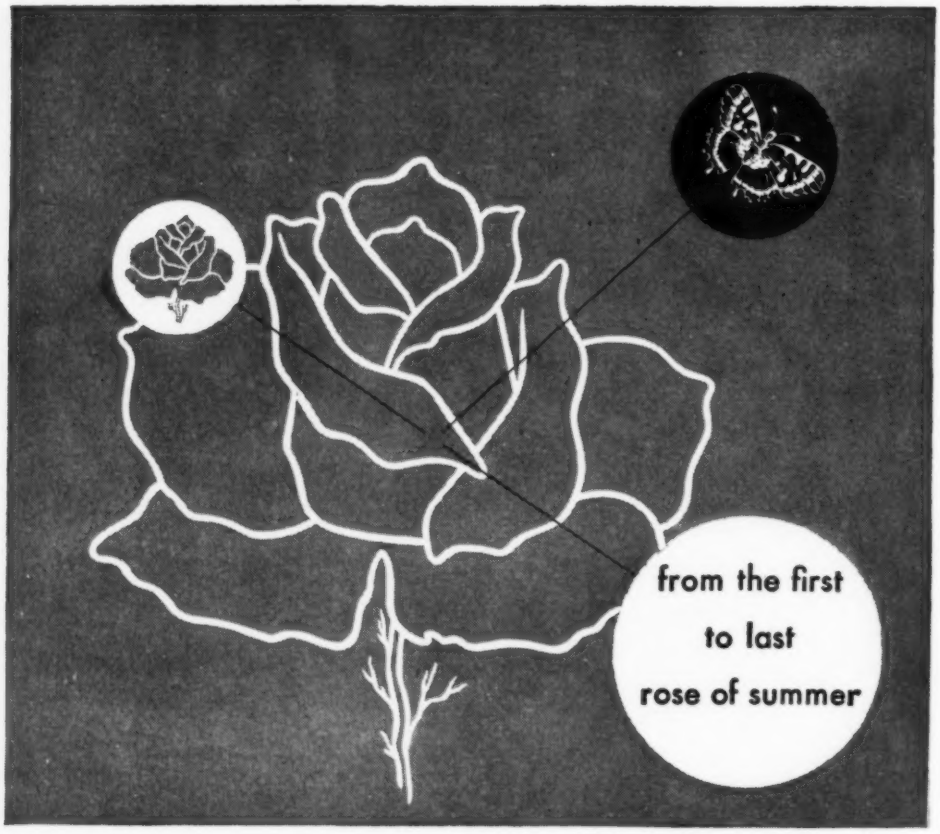

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A greaseless, bland cream with anesthetic, analgesic, astringent and protective properties, 'Caligesic' Ointment does not stain the skin and may be used safely on infants. It is also useful in the symptomatic treatment of such conditions as intertrigo, pruritus ani, pruritus vulvae and pruritus scroti.

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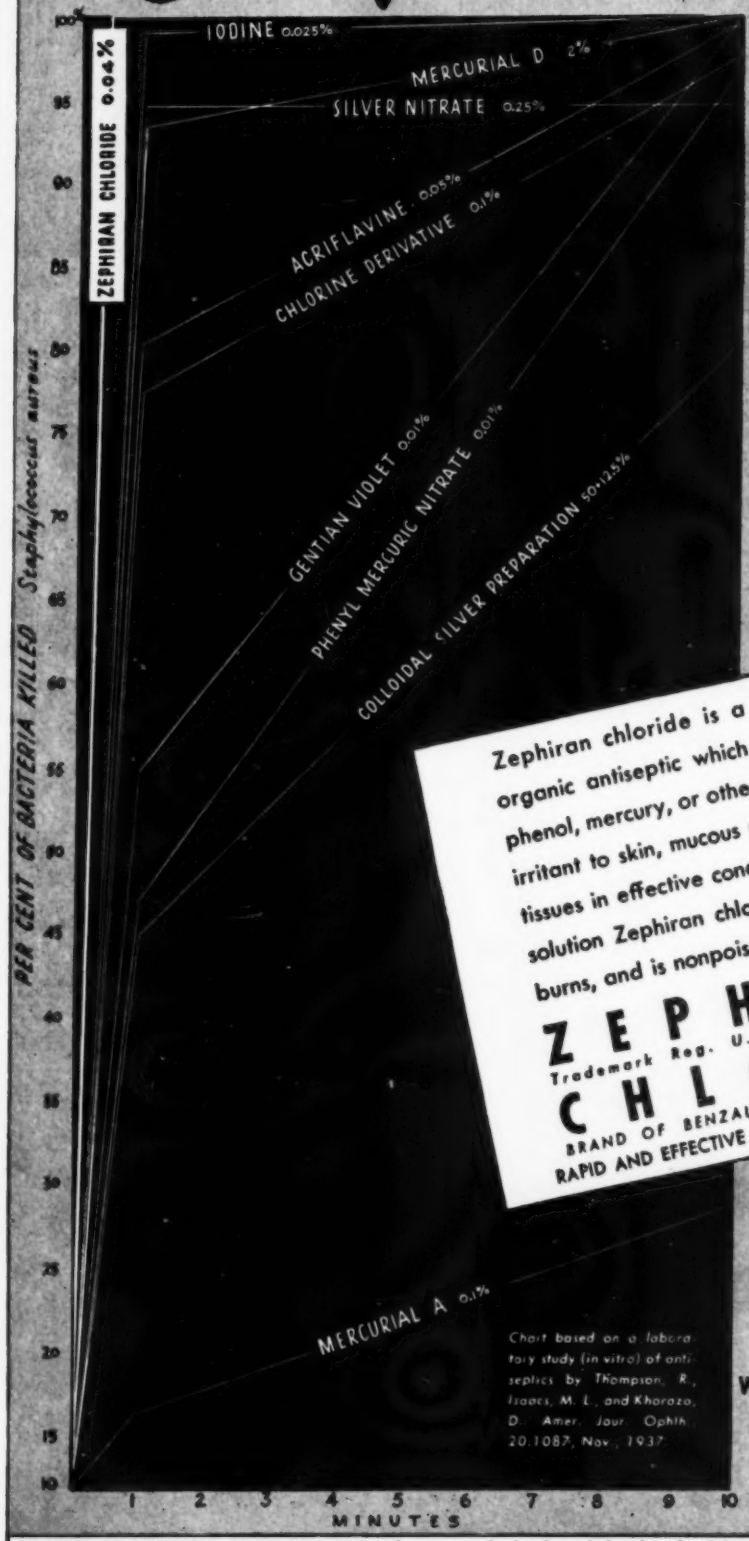

Chart based on a laboratory study (in vitro) of antiseptics by Thompson, R., Isaacs, M. L., and Khorazo, D. Amer. Jour. Ophth. 20:1087, Nov., 1937

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RAPID AND EFFECTIVE ANTISEPSIS WITHOUT IRRITATION

AQUEOUS SOLUTION 1:1000, BOTTLES OF 8 OZ. AND 1 GALLON. STAINLESS TINCTURE 1:1000, BOTTLES OF 8 OZ. AND 1 GALLON. TINTED TINCTURE 1:1000, BOTTLES OF 8 OZ. AND 1 GALLON.

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Poison Ivy, Poison Oak, and Poison Sumac Dermatitis

THYPTOL

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THYPTOL CHECKS symptoms *at once* . . . The skin heals quickly.

***Prevents spread* of the lesions. The base of kaolin and alumina gel inactivates the irritant fluid in the blisters and dries to form a protective coating which prevents spread.**

***Controls itching* promptly through the local anesthetic action of phenol.**

***Thyptol* is available in 3 oz. bottles. Apply locally.**

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(Parenteral Liver Extract with Vitamin B_1, Lilly)

The problem confronting the physician in the treatment of the average pernicious-anemia patient is twofold: (1) that of raising the red-blood-cell count to normal, and (2) of preventing neurological involvement. Both problems are solved quickly and decisively with Ampoules 'Reticulogen' (Parenteral Liver Extract with Vitamin B_1, Lilly). One-half cubic centimeter given every ten days will adequately maintain the average uncomplicated case of Addisonian pernicious anemia. Early and adequate treatment with 'Reticulogen' effectively prevents neurological symptoms. 'Reticulogen' is clinically standardized by administration to known cases of pernicious anemia. Specify 'Reticulogen' through your favorite retail pharmacy.

ELI LILLY AND COMPANY • INDIANAPOLIS 6, INDIANA, U. S. A.

This magazine is published to promote sound thought upon and concerning industrial medicine and traumatic surgery. To that end it will contain articles, news items, reports, digests, and other presentations, together with editors' comments. The editorial policy is to encourage frank discussion. On this basis contributions are invited.

Industrial Medicine

Reg. U. S. Pat. Off.

The editors will exercise care in checking on the accuracy of data printed but in all other respects articles and opinions of which expression is allowed are the opinions of their authors—the editors reserving in all cases the right to comment on the same in the current or any subsequent issues as they may be inclined.

The Journal of Industrial Health, Occupational Medicine and Traumatic Surgery

With which are consolidated "The Industrial Doctor" and "International Journal of Medicine and Surgery."

The Science, the Law and the Economics of Industrial Health

Volume 15 | July, 1946 | Number 7

Emotional First Aid Stations in Industry

—The Psychiatrist as a Staff Member of the Medical Department—

GEORGE M. LOTT, M.D., *Director,*
Mental Hygiene Division,
Suffolk County Health Department,
Riverhead, Long Island

MINOR EMOTIONAL STATES COMMON-PSYCHOSIS RARE: In considering this subject it must be kept in mind that there are all degrees of emotional disturbances or sicknesses among employees. They range from anxieties through full blown neurosis to actual psychosis. However, in industry minor or severe anxieties are relatively common and the actual psychoses rare. These remarks will be largely confined to the psychiatrist's contribution in the prevention and care of the less severe, but nevertheless troublesome, emotional sicknesses.

INTERFERE WITH PRODUCTION EFFICIENCY: Minor anxieties or apprehensive states of mind, which interfere with an employee's efficiency, are regularly found in industrial medical practice. These anxieties, which occur in all of us at times, may be very incapacitating, especially if they should become prolonged or chronic. This is, of course, similar to the findings in private or clinic practice. In an office or factory, it is the distracting confusions of the secretary, the file clerk or production line worker, which give the executives or foremen grey hair and disrupt organization. In industry the employer finds that such states frequently interfere with production and raise costs.

The problems associated with the increasing numbers of handicapped returned service men and women and with post-war conversion only make this subject all the more timely.

THE PSYCHIATRIST AS A MEMBER OF THE MEDICAL STAFF: The psychiatrist, as a regular member of the company's medical staff, has a contribution to make in minimizing such handicaps. The physicians of the medical department work as a cooperative group. Their individual special knowledge and skills are available to each other for the benefit of employee and employer alike. The following material is based on the experience of a psychiatrist, who regularly took tours of duty as a physician in the plant hospital of the Republic Aviation Corporation's aeroplane factory. The ways in which various disorders were managed will be indicated by pictorial thumb-nail sketches of case illustrations. The minor emotional problems will lead up to the more severe cases.

MINOR ANXIETY STATES: As workers come to the plant hospital for major and minor ailments, the physician and nurses on duty have the opportunity to really treat the patient rather than the symptoms. This tends to clear the handicap and cut down lost time involved in subsequent visits.

An employee of over two years' service began to appear almost daily at the plant hospital with complaints of chest pain. Several times the record showed doctor's examinations by stethescope with negative findings. On the fifth visit, the staff psychiatrist happened to be on duty. "Doc, I can't get rid of this pain here (pointing to the left chest)." Anxiety was apparent. A glance at the record showed the previous visits with negative findings. Brief inquiry elicited the onset two weeks previously, when the examiner recalled that a fellow worker had died suddenly of a coronary heart attack. Stethescope examination revealed no chest or heart findings. When asked to lift his left arm against resistance, pectoralis or breast muscle tenderness was present. The man was asked why he was anxious since this was clearly a muscle strain discomfort. "Well, to tell the truth, my father died of heart trouble and I guess I was afraid of it. You see a school doctor once said I had a heart murmur, but no other doctor found it again." The frequency of functional innocent murmurs was stated. He recalled catching a heavy load two weeks previously and straining his arm. He seemed relieved. This man's visits to the hospital ceased. The interview took four minutes.

A woman employee had repeated visits for complaints of headaches and fatigue, with numerous absences from work. She had had a number of minor accidents in the shop. There was no history of grippe or other debilitating illness. She had lost five pounds of weight. No definite physical findings had been evident. Inquiry revealed that the headache was in the back of the head and neck. It was of a "drawing" character (without pounding or real ache) so characteristic of the so-called nervous or tension symptom. In a five minute interview, it was learned that for the past

Presented at the Long Island College of Medicine's Third Postgraduate Course in Industrial Medicine, week of October 30 to November 3, 1945.

month she had been nursing an invalid mother, who required much attention at night. Arrangements to return the mother to her own home relieved the patient's symptoms and restored her work efficiency.

PRACTICAL PREVENTIVE WORK: Numerous incidents of this type, from anxiety over a small tendon ganglion to a fancied bone enlargement are repeatedly encountered and lead to much lost time if they are not handled adequately as early as possible. It seems almost as though mild neurotic symptoms can be even more disabling than actual injuries.

TROUBLESOME CONVERSION DISORDERS: When emotional worries and anxieties appear in the guise of physical symptoms, the process may be termed a neurotic conversion disorder.

A 40 year old woman, a metal worker, came in for treatment of a troublesome case of athletes' foot. However, she also showed much anxiety, was tremulous and actually was an accident hazard. On the third visit to the plant hospital she came to the attention of the psychiatrist. In a twenty minute interview, some of the main sources of her anxiety were uncovered. She was aided to face and adjust herself to them. The signs of her emotional instability were aleviated and she ceased to be unnecessarily worried about her foot condition.

The following are a few of her pertinent statements. "I worry about my feet. I don't know why. They are getting better." What else bothers you? After some preliminary statements, she revealed that she was very unhappy. It seems that her husband had left her under embarrassing conditions seven years previously. "You see, Doctor, I am trying to keep from hurting my mother. She does not believe in divorces. I can go out, but someone would see me and talk." They had no children. "My husband did not want the responsibility of a child. I am without him, yet tied to him." She had had few social outlets for several years. After some discussion she decided that she could take some needed healthful recreation by going out with women friends and not alone with a man. After being reassured about her foot condition and encouraged to face her real problems she said, "I guess I need not of spent that $50 on my feet."

When seen later, she was smiling and stable. A report from the shop three weeks later indicated her work efficiency had improved and there were no recent minor accidents.

CAN BE MANAGED WITH SHORT INTERVIEWS: It can be seen that the art of interviewing is important in these cases. It should be noted that with skill many anxiety states and even some conversion disorders can be effectively managed with short expenditures of psychiatric time.

PRIMARY HOME AND SOCIAL PROBLEMS MASKED BY MILD NEUROTIC CONVERSION DISORDERS: Psychiatric interview technique is often helpful in questions of job transfers, leaves of absence and releases when no medical physical basis for such certification is uncovered. Minor conversion disorders may mask home and social problems, the remedy for which is primarily a personnel service function.

A woman doing riveting complained of fatigue, worry and sleeplessness. She asked for medical certification for a change from the night shift to the day shift. After it was found that there was no loss of weight or other signs of poor health, she was drawn out for the real source for her exhaustion complaints. Her work was not too hard for her. Finally, she broke down and said her mother was sick and her husband was away, so she just had to be home at night to care for her mother. She had lost considerable sleep. The transfer to day work was made and a short leave granted, but not on medical grounds. A phone explanation to the personnel worker led to this action. Time required: five minutes.

Another woman complained of tiredness, lack of appetite, factory noises and stomach pains. She wanted to be on the day shift. No physical basis was found for her complaints. She seemed anxious, although she did not have the reputation of being a worrier. When asked what had come about to disturb her, she tearfully spoke of her 16 year old daughter who was out in undesirable company in the evenings when she was left unsupervised at home. Again personnel ordered the transfer as primarily a social and home problem. Eight minutes of psychiatric time required.

ADJUSTMENT PROGRAMS MAY REQUIRE COOPERATIVE MEDICAL, PERSONNEL SERVICE AND SUPERVISORY STAFF ACTION: This case illustrates how an employee, with an emotional personality problem may be passably adjusted by a cooperative program, carried out by medical, personnel and supervisory staff.

Alice was a well-mannered, 23 year old, comely young woman of old-world Italian parentage. She found herself working as a stenographer in a large crowded office of a war plant, serving under two harassed executives and occasionally relieving in four secretarial jobs in other departments. She was becoming tense, confused and made mistakes. Her supervisor said she had been selected from a large group for her intelligence and performance ability in dictation and typing.

When interviewed Alice complained of being "very ambitious, but my trouble is I am tense and have to do so many things, I get mixed up. I am not used to such a big office. My own typewriter has not come. I am too self-conscious. I can't rest easy with my fellow workers. Some don't like me. I don't really have a chance to prove myself." Later in the interview: "The trouble is the way I was brought up. I start to cry if I talk. I left my family two months ago to move here.

"Without realizing it they tied me down. They thought it was a waste of time to go to business school and that I should get a boy and marry." She was taking dancing lessons and a course in bookkeeping while working at her present job. While describing her family, it became clearer that she had been made to feel inadequate by the restrictions and protection with which her parents had always surrounded her. Alice did not feel right about disobeying her parents. She was threatened with having to take a smaller job with less pay than she could live on safely.

With the support of the personnel worker and interpretation in two subsequent psychiatric interviews, this young woman was able to lose most of her anxiety, when she settled her conflicting feelings about her parents. Her supervisor had lightened her work assignments during this adjustment period to save a valuable as well as decorative employee. She remained sensitive, but could work efficiently.

Three months later two departments were consolidated and her rating was declared in excess. She returned with considerable anxiety. Her emotional sensitivities were worked through briefly and she was able to see the change had no personal bearing on her capability. She was able to take a reduced salary rating cooperatively and soon won a deserved promotion with adequate pay "to feel safe."

If the supervisor had been unwilling to cooperate

with the personnel worker by reducing her load during the two weeks' initial treatment period, he would have lost a valuable employee when competent help was scarce. It is likely that this young woman would also have had a crippling experience.

THE NERVOUS OR NEUROTIC EMPLOYEE AND PRE-EMPLOYMENT CLASSIFICATION STUDIES: We have considered at some length the nervous employee with troublesome neurotic character traits. Employers, personnel staff, supervisors and foreman may logically at times become disturbed over the extra time and patience required to deal effectively with such problems. However, industry finds itself in the same position as the armed forces eventually experienced. It was impossible to raise a force of millions of men and women by excluding everyone with the ordinary traces of such nervous instability. Such factors are common to the human race.

It is worthwhile to note that many valuable satisfactory workers, under such conditions as accumulative fatigue, muscular rheumatism, toxic colds, monotonous work operations, or home troubles, begin to show nervous symptoms. The same may be true when certain character make-ups are given a work placement to which they are not suited.

A woman employee complained of chronic pain in the shoulder and arm muscles and appeared distressed. Inquiry revealed that for three and a half months she had been operating a light compressed air drill. "I can't stand it. My muscles hurt so when I press forward. My stomach gets upset and I don't feel well. I have tried so long. The heat treatments don't help much." True muscle tenderness was not present. Tears were evident without further complaints. Brief interviewing gave the impression of a methodical conscientious personality with good intelligence. The supervisor reported that he considered her a dependable conscientious worker. A transfer was effected by the personnel manager from this monotonous operation to a complicated wiring job where her meticulous talents could be utilized. A needed worker was retained at an important operation, which she performed efficiently and happily. The examination, recording and conference time of the physician was about 15 minutes.

PRE-EMPLOYMENT MEDICAL PERSONALITY STUDIES ADVISABLE: Incidents of this type lend validity to the proposal for an effort at brief expert personality studies of new employees, to be coordinated with simple pertinent job analysis when initial or trial work placements are made by the personnel staff.

USEFUL WITH RETURNED SERVICE MEN: Experience with this type of medical personnel program should be especially valuable in the utilization of the returned service man, be he physically handicapped, jittery or even normally attempting to re-adjust himself to peace time occupation.

A 23 year old returned service man complained of stomach pains and headaches. Physical examination showed no organic disease process. Questioning revealed he was a machinist's helper, and worked near a machine which ground metal parts. The noise from this operation was a high pitched shriek. Further inquiry determined that he had been recently discharged from the Army, after combat service in the South Pacific. Also, "after a terrible campaign on one of the Islands, I got jittery. My head ached." When? "Those shells and shrieks made me feel all tight in the stomach like a pain." What was the noise like? "That noise from the machine. I never thought of that before. Maybe that's what is the matter with my stomach, but I can't quit here. My brother is still over there." It was explained that many people react to tension with stomach symptoms. This man was fitted with plastic ear plugs, which blocked out the high pitched sounds, but transmitted ordinary conversation. His symptoms were relieved. Interview time: four minutes.

A brief study of this man and his history, during the pre-employment physical examination and personnel processing, could have revealed the inadvisability of this work assignment without the simple ear plug protection. The evaluation of emotional and physical handicaps should reveal the proper placements to avoid overloading the worker's capability and tragic costly failures.

EXPERT STAFF REQUIRED: It is evident that such a program should only be attempted with expert personnel, but should be effective in increasing production efficiency with its lowered costs. Labor turnover is expensive and may be a tragic experience to the misplaced employee.

DIAGNOSIS OF AN INCAPACITATING PHOBIA: Unreasoning and incapacitating neurotic fears appear very mysterious. The causal factors of severe cases remain hidden and are usually not apparent until after a long series of treatment interviews. They may be still more difficult to cure. The following case example is given because it is one of the rare cases where both the diagnosis and form of the basic causes became apparent in a brief diagnostic interview. It also sheds some light on the nature of a type of neurosis.

A young woman of 25 was a stenographer. On the fourteenth day of her employment a pet cat wandered into the office. This girl became panicky at the sight of the animal. "Doctor, I quit so many jobs where they keep a cat. It seems like there is one in every building I try to work in. What am I going to do? People laugh at me, but I can't help it."

Other fears were denied. However, she said she had always slept poorly and had had unpleasant dreams ever since she could remember. When asked about troublesome thoughts, "Doctor, a troublesome thing keeps happening. I can't keep a song tune from running through my mind. It makes me nervous."

The young woman was encouraged to talk and was asked about her family. "I had an older and younger sister. They both had tempers, but were not shy like me, but I had a temper too." How did you feel? "My parents liked my sisters better than me, but I was the pet of one aunt." Think how you felt then? "I was always jealous and mad when I was growing up. It is silly but sometimes I feel that way now. It is wrong; my mother said so. Once I bit my little sister."

She could not remember what song ran through her head annoyingly, but said it was about a fairy tale, connected with an ogre. What used to bother you? At about age 10, "I remember reading a story of a man who kept many cats. For many days he was ill. They became hungry and ate him." A facial expression of horror and suffering accompanied this revelation.

What else? "Sharks bother me. I remember being upset when I read about the Vistula, the ship that burned up off New Jersey. So many of the people were eaten by sharks."

It was quite clear this young woman was really not afraid of cats, but of the early guilty feelings they stirred up. As she related her spontaneous thoughts, she had no conscious realization of how revealing they were.

The infantile impulse "to eat up" and dispose of

rivals, evidently her "favored" sisters in this case, is commonly observed in normal young children. Ogres in fairy tales eat people. There is a fairy tale about cats, who eat up their master. Contrary to popular belief, traces of murderous hostility are normal in the very young. When they are made to feel too guilty over such resentments and jealousies, such feelings are submerged to cause trouble later on when aroused by chance associations. This young woman had to be referred for psychiatric treatment in order to overcome her incapacitating hysterical fear. Such a process is time consuming, but possibly less so than the correction of an orthopedic handicap or the control of rheumatic heart disease. Psychiatric time: 14 minutes.

THE PSYCHOTIC EMPLOYEE—A PROBLEM FOR THE STAFF PSYCHIATRIST IN ARRANGING CONSTRUCTIVE RELEASE FROM EMPLOYMENT: Psychoses very occasionally flower out in employees. Their onset may be insidious as well as dramatic. During the developing phases, the victims can spread havoc in a plant or office. This is especially so if there is a suspicious or persecutory trend to their delusions. Morale may be upset. The first essential is to diagnose the cases as early as possible. They should then be segregated and put under treatment promptly. While the plant consultant is responsible for the diagnosis, the rest of the care is primarily up to the family or closest friend. However, the psychiatrist's services in interpretation of the illness to the family may be required, in order to avoid aggravation of the patient's condition during the process of release from employment.

A 42 year old stenographer began to complain that someone was bothering her. No particular notice was taken at first. However, the woman's brother began to make disparaging remarks in the community about the plant. A few of her fellow workers became suspicious and resentful of each other because of the girl's vague complaints of spies. It was not until eight weeks later that she began to speak of hearing voices.

At the plant hospital, she came to the attention of the psychiatrist. His notes were as follows:

This patient was referred by Personnel Department.

Patient complains of hearing voices talking about her transmitted by wires possibly into the plant from unknown persons outside. "Do the girls want me here?" She noticed them the "third day" after she began work, but "now they feel at employment I am too nervous to work." Vague ideas of reference. Voices say "Don't you know she is working for the FBI?" They keep saying "Catch on?" "Why don't you?" She feels these may be "Imaginations," but they sound "very real." "I thought maybe the local people in town were playing a joke on me. These places may be controlled by a group." No true insight. Emotional responses are inadequate and inappropriate to productions. Friendly —oriented—sensorium intact. Seems rundown physically, menopausal age, without subjective or objective symptoms of same. Always sensitive and self-conscious since childhood. Good work history and satisfactory work in plant in accounting department. Paranoid schizophrenic picture. Prognosis doubtful. Observe until responsible relative is contacted. Conference with Chief of Personnel Service. To be released in constructive manner. Husband is in service—overseas? Mother elderly. No family physician.

The division chief was very cooperative and volunteered to allow time to constructively arrange release. It took a week to get the brother, an attorney, to admit that his sister was possibly mentally ill. He admitted she had mentioned most of her complaints a month previously. He expressed the belief that her statements were rational, and that the office simply wished to replace her with a political appointee. He felt the hiring was run by the local politicians in power, who belonged to one party and he to the other. He felt some of the local people were also against him. On the sixth day the patient was persuaded to stay home. Treatment measures were advised.

The engineering of the release was properly left to the psychiatrist and treated as a medical matter. This saved the management much embarrassment.

DEFINITE LIMITATIONS: Psychiatric services, useful as they may be, are not a cure-all. This description of the value of psychiatry to industry and employees, illustrated as it is with striking case descriptions, tends to give too exalted a picture. It can be said that the short treatments indicated are superficial and may not be of permanent benefit. Basic neurotic character traits are not touched and may only be temporarily aided to more useful and less troublesome adaptations. Brief pre-employment personality studies will not be adequate or even usually correct enough for ideal initial job placements of workers or supervisory staff. In short, medical-psychiatric services are not going to solve the hazards of the human element in industry. However, in cooperation with the personnel, supervisory and executive branches, such services do have a limited but useful contribution to make to industrial plant morale and production efficiency.

Conclusions

A PSYCHIATRIST on the company's medical department staff can be of definite assistance. If possible he should take regular duty hours. Even once a week may be helpful. He is then available to workers through routine non-alarming channels. He can also assist and interest the various staff members in caring for the various degrees of emotional sicknesses encountered among employees.

Psychiatric interview technics and findings may be needed in questions of medical authorization for job transfers, leaves and releases, when handicapping physical findings are not sufficiently prominent or are entirely absent. Minor neurotic conversion symptoms often mask causative home and social problems, a knowledge of which would be useful to the personnel department in making their decisions.

Pre-employment medical-personality evaluations, in the hands of an expert personnel staff, may be helpful in efficiently utilizing available man power. The emotionally or physically handicapped returned service men are especially worthy of such efforts. The problems incident to post-war conversion will only multiply the need for the most adequate personnel policies and practical application of them.

THE Office Manual of the British Physician, issued by the government and required to be ministered by him, contains over 350 pages of rules, regulations and outlined procedure, while the book containing the National Health Insurance Acts, together with the statutory rules and the decisions of the Minister of Health, is about 1,300 pages. These are the manuals and guides of the physician in practice there under the federalized public health program. With our known propensity for issuing rules, regulations and manifestos by our present bureaucracy, we may be certain that we would let nothing stand in our way to exceed by far the number and ramification of regulations and directives over any other country. Bureaucratic pride would stand for no less.

SENATOR B. B. HICKENLOOPER (R. Iowa), in J. Iowa Med. A., June, 1946.

Expansion of Industrial Hygiene Programs in Official Agencies

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WHEN we consider how brief is our history of industrial health activities, we as a profession may congratulate ourselves upon the results achieved to the present time and feel a glow of optimism as we look toward the potentialities of the future.

We need to cast our view backward no further than 1914 to see the birth of industrial hygiene in this nation as an activity of the national health agency. That was the year when an Office of Industrial Hygiene and Sanitation was established in the U. S. Public Health Service. With this instrument, it was possible to commence applying the knowledge already gathered about the health hazards of industry and to develop a body of knowledge based upon both laboratory research and field study, with which to build sound practices of industrial health.

But the actual application of all this knowledge where it counts—that is, in the protection of the health of workers in our factories, shops, and mills—has been gathering impetus only since about 1936. Passage of the Social Security Act in that year was the lever, for under Title VI of this law the Public Health Service could take an active part in encouraging development of industrial hygiene services in state and local governmental agencies.

This short period, no more than a decade, has seen the establishment of an official industrial hygiene service in every industrial state of the nation. There are now 50 units functioning in 39 states, one territory, and in the Tennessee Valley Authority.

The accomplishments of these units to the present time have been notable. They have introduced the concepts of industrial health practices into most industrialized areas of the land. They have conducted surveys in a great many industrial establishments, and from their surveys have resulted striking improvements in working conditions for the employees of these plants. What we have achieved in the prevention and control of industrial disease and disability may be credited in large part to the work of these state and local services, backed up by the Industrial Hygiene Division of the U. S. Public Health Service, and the health activities of many of the larger industrial organizations.

Effects of the War

EVERYONE here today knows that the recent war gave great impetus to the development of industrial hygiene. Our wartime experience proved the value of industrial hygiene in a dramatic fashion. We were able to show conclusively that industrial hygiene technics and knowledge, properly applied and maintained, could control the hazards of most dangerous industrial materials and processes, protect the general health of workers, and increase productivity by keeping the morale of these men and women at a high level.

The tried and successful foundation methods worked out before the war proved just as effective in wider application to the wartime problems of industry. But in addition we developed new methods for controlling industrial hazards, and we were able to apply them on a far wider scale than previously to help American industry win the battle of production.

One of the most important of these new technics, in proved results, is the method of anticipating dangerous exposures and building preventive measures right into the industrial plant. Our engineers can plan with the architects, so that recommended ventilation, enclosure of hazardous processes, and so forth, can be carried out while the new plant is in the blueprint stage—*before* a single worker is exposed to harmful conditions.

How effective such a working method can be is indicated by our experience with the munitions industry. It was vitally important to keep the men and women who made munitions on the job every day. A worker absent for a day endangered by that much our chances of victory. The Industrial Hygiene Division of the Public Health Service worked closely with the War Department to safeguard health conditions in the munitions plants. Teams of industrial hygienists—that is, physicians, engineers, and chemists—maintained a constant watch. And the result was a phenomenally low rate of disability and death in this, a dangerous industry; a rate so much below that of World War I as to demonstrate beyond any question of doubt the effectiveness of industrial hygiene.

These results were achieved not by environmental control alone, however. A large share of the credit must go to the professional health personnel working in these plants, insisting upon strict personal hygiene and plant housekeeping, exercising careful medical supervision, assuring proper sanitary conditions, and carrying on programs of health education among the workers.

In this wartime period, great advance was made in focussing the whole community health program upon industry. Tuberculosis case finding, venereal disease diagnosis, dental service, nutrition facilities, and education—all these were brought right into the plants, to keep working men and women healthy and productive. Wartime manpower conditions made this job particularly difficult. Men in the prime of life were largely replaced by women, older workers, youths, and handicapped persons. The special health needs of these groups had to be considered, and methods developed for meeting these needs. Where industrial hygiene was at work this was done. It was proved that it *can* be done—that all elements in the working population can be kept healthy and on the job through the application of the proper health measures.

The Peacetime Outlook

I HAVE presented to you the bright side of the industrial hygiene picture at the present time. It is a record of which we may be proud. But there is another and darker side. Let us recognize that, while industrial hygiene did a great job where it was applied, this application was made to no more than a small proportion of our industrial establishments, a mere fraction of our industrial workers.

Nine states as yet have no official industrial hygiene services, although one of these states, Florida, is now in process of establishing such a service. In Maine, Delaware, New Mexico, Arizona, Nevada, Nebraska, North Dakota, and South Dakota, no agency of government is concerned with health conditions among industrial workers. And all of them have enough hazardous industries to deserve serious concern.

No more than 10% of the men and women employed by American industry received the protections of industrial hygiene in the past year. One might call the roll of the states and find state after state in which

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the coverage of all existing industrial plants and hazardous occupations is no greater than 3 to 5%.

In most states, professional staff and laboratory facilities are so limited that follow-up visits cannot be made or at best are made very infrequently. Yet we know that such follow-up service is necessary to an effective program.

Did the end of the war mean an end to the need for intensive application of industrial hygiene in American industry? We know that is not true. In fact, at no time in the past has there been such vital need for the protective services industrial health people have to offer as exists today and will exist in the critical years to come.

Reconversion of our industrial plants to peacetime production involved consideration of many health problems. Wise managers took into consultation the industrial health people who knew the answers to problems of this kind, and so *prevented* potentially dangerous conditions.

Many new industries became established in the war years and will develop rapidly to fill consumer demand in these post-war years. It is of the utmost importance that we cope successfully with the new health problems involved in them. Every new process, improvement, or discovery in American industry presents some new danger, which must be analyzed in the laboratory, must have methods devised to prevent or control it, and then these methods must be applied in the production and use of the product.

Much research was done in aviation for the war, both on the health problems of the aviation industry and on the conditions affecting flying personnel. This knowledge must be applied to the peacetime industry and to civilian air transport to safeguard workers, flyers, and the flying public.

Plastics is another industry dealing to a large extent with hazardous materials and processes, to which we must apply every possible means of preventing the dermatoses and systemic poisonings which may result from its manufacture. Synthetic rubber is another such industry, one which mushroomed during the war and in which industrial hygiene controls were successfully maintained.

In the welding and fabrication of the newer metals, both light and heavy, we encounter many hazardous processes and toxic materials. Industry is making increasing use of x-ray for industrial inspection. This is a highly hazardous process, in which workers can be assured of safety only by constant vigilance on the part of industrial hygiene agencies.

The time lag between discovery of effective control methods in the laboratory and their application in the factory must be eliminated, or at least cut down as far as possible. Alert industrial management is taking advantage of the opportunity to obtain this kind of service from the state and Federal agencies. For example, acting at the direct request of management, the Public Health Service has under way an investigation of the health hazards in the cemented tungsten carbide tool industry, the rapidly growing industry which produces some of our finest high-speed cutting tools. We have some 10 professional persons assigned to this study, including medical, nursing, engineering, statistical, dermatological, dental, toxicological, and chemical personnel.

We are being called upon increasingly to develop industrial hygiene protection for agricultural workers and workers in the food processing industries. This demand may be expected to grow rapidly, especially in connection with such relatively new processes as deep freezing and dehydration.

PROBABLY everyone is aware that the largest single problem facing industrial hygiene today is how to develop health services and safeguards in the smaller industrial establishments of our nation. The tremendous importance of this problem may be seen from the fact that plants employing 500 or fewer workers make up about 98% of our entire industrial establishment, and that these plants employ approximately 60% of our entire industrial working force. Every variety of manufactured and processed goods is represented in their output.

Many of our larger industrial and mining enterprises have developed sound and effective health services of their own. A growing number practice industrial hygiene with their own personnel and with the cooperation of the official agencies. But in the smaller plants, any service or protection of this sort is the rare exception.

This is where we can reach a large proportion of that 90% of America's workers whom we are not now serving and protecting. We must develop plans—a variety of plans to fit the various situations in all parts of the nation—for meeting this need.

Already, in a number of places, such plans are in operation. The one functioning in Long Island City, Queens, New York, is particularly notable. Here we see cooperation among the official health agencies and the community service groups, focussing the full facilities available upon the small plants in an area of highly diversified industry. Involved are the New York City Health Department, the New York State Department of Labor, the U. S. Public Health Service, the county medical society, the local visiting nurse association, the Chamber of Commerce, labor unions, and management and labor in the plants participating in the demonstration.

Projects differently organized are operating in several other localities. All are interesting, worthy of study by industrial health people. For this is our challenge—to work out the necessary plans for small plants' health programs, and to apply these plans progressively to more and more industrial establishments, until we actually achieve our aim of serving and protecting every wage-earner in the land.

We find ourselves using a new approach toward industrial hygiene in our thinking today, an approach which must be reflected as our work expands. This might be described as the "total man" concept in relation to the industrial worker. We are concerned not only with the diseases of occupation, which must be prevented or controlled, but with any and all the causes of illness or lowered efficiency affecting the worker.

For this reason we encourage and support the kind of pre-placement examination in industry which is intended not to screen out all but the nearly physically perfect applicants, but rather to match the abilities and capacities of the man with the demands of the job.

The return to industrial employment of so many veterans who suffered some handicap as a result of their war experience makes this approach imperative today. We in industrial health work must emphasize the abilities rather than the disabilities of these men and women, must play a very large part in aiding them to overcome their handicaps and resume their proper places as self-sustaining and self-respecting wage-earners.

To achieve this aim, we must apply within industry every valid and applicable technic of public health and private medical service. Industry can no longer afford to ignore the contributions to productivity which can be made by industrial dentistry, mental hygiene, and other hitherto little-used fields of professional skill. A

good start was made during the war in developing better nutrition among workers in industry. This should be expanded, and, of course, must be a part of any sound health program for smaller plants. We should place more emphasis upon the protection and improvement of vision and visual conditions in industry. We need to make full use of health education, which can contribute so much when fully developed and properly used.

The Proposed Program

THESE ARE the major problems we face. How do we propose to deal with them? What do we intend to do toward achieving these aims?

We expect to strengthen the scope and quality of our resources, both national and local. We plan to encourage industrial hygiene services where none now exist, to aid the development, expansion, and decentralization of existing services. We hope to give the state and local units the benefit of increased technical and professional services from the Industrial Hygiene Division.

We shall continue to develop industry-wide studies of health hazards. In addition to the already-going investigations in the cemented tungsten carbide tool industry and others, we have projected investigations in certain light metal industries, including aluminum, magnesium, and beryllium. We intend to study intensively the fluorescent lighting industry, plastics industry, and various establishments handling vanadium, antimony, steel, brass and iron.

Our industrial dentistry activities are to be considerably expanded, as are our facilities for providing consultation and assistance in the industrial nursing field. The chemical activities, toxicological investigations and services, statistical projects, and the engineering work of the Division, which are much in demand, are to be developed further.

We are about to institute the practice of assigning skilled consultants in industrial hygiene to the district offices of the Public Health Service. This will make such services more readily available to the state and local units. One consultant is already working in one of the districts.

And now we come to the heart of the industrial hygiene program—the industrial hygiene services in the states and industrialized areas of the nation. Without these state and local services, there could be no effective industrial hygiene program. It is you, the personnel of the states, cities, and counties, who actually carry forward the work.

The highly successful method of grants-in-aid to the states will continue to form the basis of the support for industrial health work given by the Public Health Service. If an increase in these grants-in-aid becomes possible, it would permit the state and local industrial hygiene units to respond more satisfactorily to the demand from industry, labor, and other groups for investigation and development of new services toward the health protection of all industrial workers.

In the past year, we know from our state-by-state analysis that no more than 1% of the total budget for health service has been assigned to industrial health work. The result has been service totally inadequate for the need and demand.

Some assistance has come from the United States government in past years, and we may assume will continue to come. But this Federal money must be supplemented by state and local appropriations. The past two or three years have shown encouraging trends in the direction of greater state and local support for industrial health work. Let me recommend strongly that such appropriations be encouraged. Legislatures are meeting next year. This is the time when the needs of the industrial health programs in every state and industrialized district can and must be urged. It is a healthy practice for the local services to receive as much as possible of their support from their own resources, since such a practice assures interested participation by all the affected elements of the local population. We look to you to emphasize this need.

In conclusion, I wish to point out several urgent problems toward the solution of which we can work should expanded funds become available. One such problem is the salary scale in industrial hygiene on the state and local level. It will come as no news to you that present salary scales are far too low to attract and hold the kind of personnel needed. State ideas on this matter will have to be revised and brought more nearly into line with existing salary levels in private industry and other agencies competing for the services of this same skilled personnel.

Another acute problem is the need for recruiting and training additional industrial health people. The increased grant-in-aid money can be used to develop programs of education and in-service training as a part of the total program. Let me urge that every effort be made to encourage the development of post-graduate training facilities in the universities, medical schools, and schools of public health of the nation.

Should more funds become available and we use them wisely and judiciously, we can make the coming year the most successful in our history. This means that we can go far toward achievement of our aim of protecting and improving the health of the worker, and thereby increase the productivity and wealth of the nation.

Color Vision in Industry

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AN INVESTIGATION was undertaken in a relatively large plant at Oak Ridge, Tennessee, to establish criteria by which the relative red-green color perception of employees could be judged. For practical purposes we were concerned with establishing three general classifications which would enable us to determine when an employee has color perception which is: 1—very poor, 2—below average, 3—average or better than average. At the same time this investigation afforded us an opportunity to compare the relative color perception of men and women.

As routine procedure employees are given visual skill tests on an Ortho-Rater. Because of the general use of this instrument in the plant and the ease of applying the scores in an analysis we elected to use the color vision test in this instrument as a basis for general color vision evaluation.

The color vision test in the Ortho-Rater consists of four plates of various colored dots which form patterns of six numerals. These numerals require different levels of accomplishment for their discernment. A score is given an employee according to the number of numerals that he names correctly. For example if an employee recognizes four of the six numerals he is given a score of 4, if he recognizes five of the numerals he is given a score of 5.

For this study we selected the test cards of 2,083 employees between the ages of 18 and 30 years who were examined in the first part of 1946 and made an analysis of their scores on the color vision test. (Refer to attached table.)

A comparison of the scores shows that, as a group, men have a higher average than women. The mean score for men was 4.4. The mean score for women was 4.20. The mean score for both groups was 4.32.

A further comparison shows that 5.2% of the men and 2.3% of the women failed to make better than a score of 1 indicating that more men than women have poor red-green color perception. On the other hand, 52% of the men and 39.8% of the women made a score of 5 or better indicating that a greater proportion of men than women have better than average red-green perception. As a group men vary more than women in their color perception tending to make both better and poorer scores than women.

DISTRIBUTION OF SCORES

Scores	Men	%	Women	%	Total	%
0	29	2.4	15	1.7	44	2.1
1	34	2.8	5	.6	39	1.9
2	47	3.8	39	4.5	86	4.1
3	95	7.9	150	17.2	245	11.8
4	376	31.1	316	36.2	692	33.2
5	366	30.2	218	25.0	584	28.0
6	264	21.8	129	14.8	392	18.9
Total	1211	100.0	872	100.0	2083	100.0

	Men	Women	Total
Mean score	4.40	4.20	4.32
Standard error of mean	.04	.04	.02
Standard deviation	1.37	1.22	1.31
Average age in years	24	22	23

From these results it seems safe to assume that, within the same age group, there are approximately twice as many men with poor red-green color perception as there are women; secondly that there are more men with a high degree of color perception than there are women; thirdly that as a group men have better color perception than women.

It is evident that color vision is a relative affair. The line differentiating between those who are color blind and those who are not is an arbitrary matter. For practical purposes is is not necessary to know where the line dividing the color blind and the color sensitive should be drawn. It is important in industry however to know whether an individual has adequate color vision to perform the job to which he is assigned.

Before it can be decided whether or not an employee meets certain standards for a job those standards must be set. The minimum degree of color perception necessary for any particular job can best be determined by an analysis in which a comparison is made between certain known factors, such as quantity and quality of production, and scores on color vision tests. In certain types of work, however, it is difficult to obtain such factors for comparison. When this can not be done the best alternative is to set arbitrary color vision standards.

In instances where it is necessary to set empirical standards it is practical in most cases to divide jobs into three groups: 1—those jobs in which no color vision is required, 2—those jobs in which some degree of color vision is required, 3—those jobs in which an average or better than average degree of color perception is required.

In work requiring no color perception employees may be selected regardless of their degree of color vision. In work requiring some color perception, such as the discernment of primary colors, employees having color perception which is slightly below average or better may be selected. In jobs requiring average or better than average color perception, such as the discrimination between and recognition of various shades and color hues, employees having average or better than average color perception may be selected.

The classification of employees according to color vision is difficult and depends to some extent on the type of test used. On the basis of this study the following groups have been established.

Color Vision Groups	Percent		Ortho-Rater Scores
	Men	Women	
Very poor	5	2	0 - 1
Below average	15	22	2 - 3
Average and above average	80	76	4 - 5 - 6

Experience may show that in certain jobs these groups are not selective enough, in which case it may be advisable to rearrange the classification suggested above. We have not found the need to select only those employees with superior red-green perception for any particular job. However, employees with superior color perception can easily be segregated by selecting those with the highest scores in the average and above average group.

An empirical system of establishing visual standards for different jobs is not recommended where a comparison can be made between visual skills and tangible factors such as employee productivity and errors. Job placement based on empirical standards for color perception, however, is preferable to the indiscriminate placement of employees in jobs where their chance of failure may be high because of inadequate color vision.

A Practical Surgical Approach to the Subclavian Structures

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EXPOSURE of the subclavian structures in civilian practice is relatively uncommon. In military surgery the dissection of these structures is accomplished with a greater frequency; i.e., for wounds damaging the upper reaches of the brachial plexus and the subclavian and axillary vessels.

Exposure of the subclavian structures has presented many difficulties in the past and has been overcome by the very radical method of complete excision of the clavicle. This operation is justified by the men doing it on the basis that any lesser procedure does not give adequate exposure, and, further, that removing a portion of the clavicle and replacing it results in the death of the fragment removed, with resultant deformity.

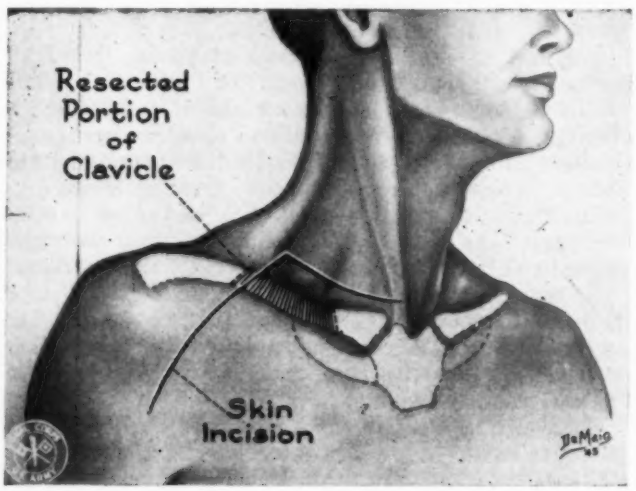

Fig. 1
Schematic representation of skin incision for right subclavian arterio-venous aneurysm. Incision is over the approximate course of the great axillary and subclavian vessels

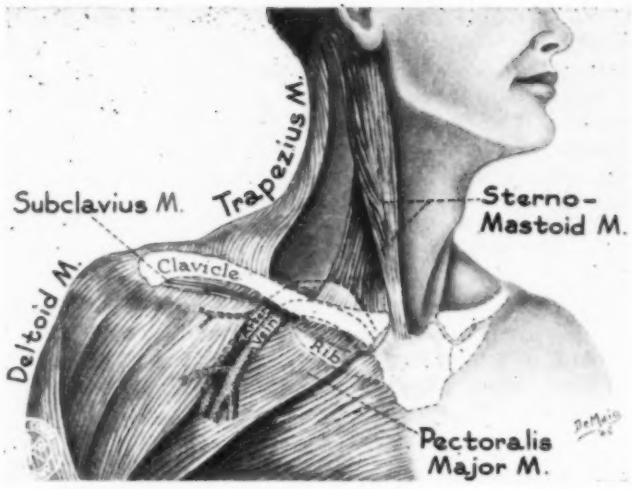

Fig. 2
Schematic diagram of the major structures in the right subclavian area

The method by which the clavicle is divided singly does not give free adequate exposure of the medial portions of the subclavian vessels, so vital in the operations for arterio-venous sinus in this area. The objections to the subperiosteal excision of a portion or all of the clavicle are, first, that the remaining periosteum is somewhat of an obstruction in the operative field, and, secondly, the ossification of the missing portion of the clavicle offers only ultimate clavicular deformity. In regard to the separation of the muscles from the clavicle with complete excision of a portion or all of the clavicle, the resulting deformity is even greater than the subperiosteal resection with the addition of an unstable shoulder girdle.

The method presented here offers adequate exposure, with an anatomical restitution of the clavicle with a minimum of muscle division. The procedure has been used for small subclavian aneurysm and repair of injured nerves of the brachial plexus.

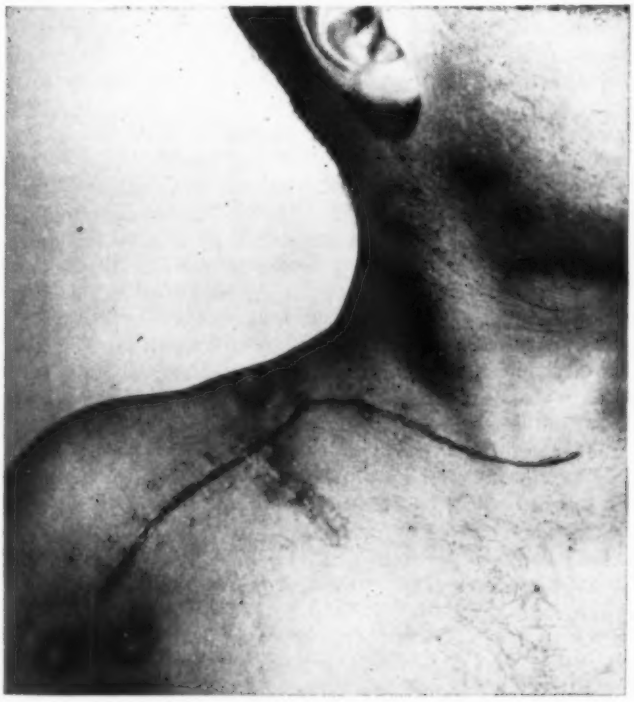

Fig. 4
Healed operation for subclavian arterio-venous sinus. Seventeen days post-operative (line of incision tinted to show location)

Fig. 3
Schematic representation of repair of clavicle

The steps in the procedure are as follows:

1. The skin incision approximately parallels the course of the axillary and subclavian vessels. (See Fig. 1.)
2. The clavicular attachments of the trapezius, deltoid, sternocleidomastoid and clavicular portion of the pectoralis major muscles are identified.
3. The oblique Gigli saw cut lines are now decided upon, a lateral one from a point between the attachments of the deltoid and pectoralis major muscles to the clavicle below to the medial edge of the attachment of the trapezius above, next a medial cut line from the lateral portion of the clavicular origin of the sternocleidomastoid above to a point about 2 cm. medially below. These lines may be marked with a scalpel.
4. A scalpel handle is now introduced beneath the clavicle and above the subclavius muscle and several screw holes, at proper points, are drilled, while the clavicle is still firmly fixed, on either side of the lines previously marked, the scalpel handle being replaced for each drill hole, for protection from the drill to the underlying structures.
5. Now the clavicle is divided in the oblique lines, previously marked, with a Gigli saw and we have remaining free approximately the middle one-third of the clavicle attached to the pectoralis major, from which the bone fragment is not removed. The important point is that the blood supply to this portion of the clavicle is derived from a branch of the thoracoacromial artery, which is distributed through the clavicular portion of the pectoralis major, the portion so removed will live when replaced.
6. The subclavius muscle is next divided.
7. The lateral portion of the clavicle is retracted laterally and superiorly, the mid-portion caudally and medially, the medial portion inferiorly and medially.
8. For vascular operations involving the subclavian artery, the anterior belly of the scalenus anticus is divided near its insertion into the first rib.
9. For surgery upon the upper reaches of the brachial plexus, the inferior belly of the omohyoid must be retracted or divided.
10. Repair follows routine surgical principles, with a wiring or plating of the free portion of the clavicle anatomically in place.

Summary

A METHOD is here presented for the dissection of the subclavicular anatomical structures which gives adequate exposure, combined with excellent anatomical and physiological restitution.

Tetryl Exposure

—Analysis of Four Years of Medical Experience with Tetryl—

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WAR INDUSTRY resulted in many new types of occupational disease hazards. Some of the medical and medicolegal problems arising from these hazards can now be evaluated. One of these problems is the status of tetryl or trinitrophenylmethylnitramine in the production of occupational disease.

Tetryl is generally used as a booster or as a bursting charge in explosive shells. Processing of this compound results in varying degrees of direct contact and indirect contact by dissemination of tetryl particles in the atmosphere. Tetryl is supplied to loading plants in crystalline or granular form and is generally blended with graphite, stearic acid or barium stearate for processing into pellets which in turn are loaded into shells.

The role of tetryl in the production of dermatitis is well known and reports have been numerous. The possibility of tetryl as an etiologic agent in the production of systemic disease has been considered, but reports have been largely negative. Despite negative reports the idea has persisted that tetryl may cause serious systemic poisoning, and this impression has even found its way into certain workmen's compensation courts. Inasmuch as trinitrotoluene (TNT), a closely related explosive compound, has been incriminated in the production of systemic disease, it might be inferred that tetryl may cause the same. In a previous report,[1] we made the statement that preliminary investigation indicated the probability of systemic manifestations due to tetryl, but additional clinical studies and observations were necessary for substantiation.

The purpose of this report is to summarize four years' experience with tetryl exposure and clarify impressions based on this experience at a large shell loading plant.

In four years of continuous operation, 3,807 cases of tetryl dermatitis were diagnosed and treated. It is of interest to note that these cases constituted 4% of the total volume of all types of occupational disease and injury cases. One hundred and seventeen cases of dermatitis (3%) resulted in lost time (over 24 hours). Forty-two cases (1.1%) resulted in compensable lost time (over seven days) for a total of 572 compensable days.

Transfer from tetryl exposure is an important feature in the management of dermatitis cases. The severity of the case or recurrence on trial exposure required permanent transfer of 31% of the cases. Thirty-two per cent of the cases were transferred temporarily from tetryl exposure and gained an apparent tolerance, i.e., they were returned to contact without subsequent recurrences. This "tolerance" or "hardening" is difficult to evaluate and is a matter of degree. Tetryl dermatitis may be considered as a local skin response due to an acquired sensitivity to tetryl. Many cases of dermatitis develop only a partial tolerance to tetryl on recovery and will recur on heavy exposure. Others maintain a higher degree of sensitivity and recur on very slight exposure. For this reason the correct evaluation is very difficult to arrive at with varying conditions and amounts of exposure. However, in our experience it appears that between 60% and 68% of cases seem to gain a working tolerance or "hardening."

Various methods have been utilized for protection of the workers exposed to tetryl. Engineering controls directed at the source of exposure have brought about mechanized loading processes. These processes reduced the worker contact and thus the complaints. Exhaust ventilation of high exposure operations has also reduced the worker contact. The necessity for meeting constantly increasing production quotas as well as the changing requirements did not allow the complete refinement of these control measures.

Medical regulations not only worked toward the well-being of the individual worker but also emphasized to all levels of supervision the occupational dermatitis hazard. The cooperation of the medical, safety and production divisions is a highly important factor in the control of any occupational disease. It was found that the enforcement of regulations providing for shower baths, the use of indicator soaps, daily laundered uniforms, and the reporting of all cases of dermatitis reflected a definite decrease in the severity and recurrence of cases. Regularly scheduled and properly supervised housecleaning methods, based on an appreciation of the health hazard of tetryl dust accumulation, have proved effective.

Early controlled trials with protective hand and face creams were encouraging. However, the many difficulties encountered on continued use, such as inconvenience of workers and their reluctance to use the creams, the requisite of constant supervision, dispensing difficulties, etc., offset the questionable benefits.

The ideal management of tetryl dermatitis is removal from contact, but this is rarely satisfactory to both members of the medical-production team. Neither is removal from contact indicated purely on a medical basis in all cases. Many cases may be treated while working in contact with tetryl, go on to full recovery and suffer no recurrence.

This "hardening,"[2] acquired tolerance, or loss of sensitivity, however, is inconstant, difficult to evaluate and at best unpredictable.

For practical purposes cases of tetryl dermatitis may be divided into mild, moderate or severe on the basis of degree of involvement. This, of course, depends upon the judgment of the examining physician. Mild cases are designated as those of minimal involvement with few subjective symptoms of itching and burning. Moderate cases are those with more pronounced dermatitis of face and contact areas and more severe subjective symptoms. Severe cases are designated as those of marked involvement of contact areas, facial distortion due to edema and intense burning and pruritis of affected skin. In our experience severe cases of dermatitis became progressively more severe, as a rule, when allowed to remain in contact during treatment. Frequently, mild cases exposed to tetryl during treatment suddenly "flare up" and develop into severe cases resulting in lost time. Also, investigation and close observation have shown that many workers endure and attempt to hide minimal recurrences of dermatitis because of premium pay allowed contact workers.

The following management of tetryl dermatitis cases has been evolved and is dependent on competent and experienced medical judgment. Mild cases are treated at work and placed in minimal exposure. On recovery they are returned to their regular work. Moderate cases are temporarily transferred from all exposure during treatment and on recovery are again placed in minimal contact. All cases failing to respond to treatment and recurrent cases are transferred permanently. All severe cases are removed from contact, treated on an ambulatory basis or hospitalized as indicated. Treatment consists of aluminum acetate or boric acid wet dressings, zinc ointments and lotions, sodium-thiosul-

fate intravenously, etc. The very few severe cases that have been returned to exposure without recurrence and the lack of a suitable yardstick with which to make the evaluation have led us to transfer all these cases permanently out of exposure.

The possibility of systemic disease resultant from tetryl exposure has been considered by many investigators. An understanding of the term "systemic diseases" is most important. For purposes of this discussion the term systemic disease will be used in connection with disease processes due to absorption of tetryl and resulting in demonstrable pathologic change.

Symptoms of exposed workers that were possibly due to tetryl were extremely varied and evaluation has been difficult. Apprehension due to the explosive nature of the compound and fear of "poisoning" from tetryl were oftentimes major factors in presenting complaints. Cases were divided into dermatitis and non-dermatitis groups and both groups were investigated thoroughly for evidence of systemic disease. These investigations included general physical examination, chest x-rays for pulmonary pathology, and blood work-up including erythrocyte counts or hematocrit determinations, leucocyte counts, hemoglobin determination and differential counts. Complete urinalysis was routine on all cases and blood chemistry examinations were performed as indicated. Control studies and investigations were done with representative groups of 200 non-exposed workers.

The non-dermatitis group presenting complaints possibly due to tetryl was composed of 1,962 cases. Of these, approximately 50% had symptoms referable to the upper respiratory tract and commonly were cough, nasal and throat irritation, and epistaxis. Observations indicate that tetryl may cause engorgement and irritation of sensitized nasal and pharyngeal mucus membrane in certain individuals. Minute localized ulceration of nasal mucus membrane may occur causing epistaxis. All cases of upper respiratory complaints responded satisfactorily to symptomatic treatment or to transfer from exposure. Chest x-rays failed to demonstrate any pulmonary pathology resultant from tetryl exposure, nor was the incidence of incipient tuberculosis greater in exposed than in non-exposed workers. This is in accordance with the findings of other investigators.[3]

The remaining 50% of non-dermatitis cases presented a great diversity of complaints allegedly due to tetryl. Gastro-intestinal complaints were predominant and most commonly were anorexia, nausea and loss of weight. Complete clinical work-ups revealed no significant findings of gastro-intestinal pathology attributable to tetryl. Nutritional and psychogenic factors were found to be responsible for the great majority of these complaints. Laboratory tests of blood and urine demonstrated no renal or hepatic dysfunction.

A small number of cases (less than 1%) of moderate secondary anemia have been observed in both the dermatitis and non-dermatitis groups. Severe anemia or aplastic anemia has not been observed in tetryl exposed workers. All secondary anemias responded promptly to treatment. This small percentage of moderate anemia cases was not considered as due to tetryl exposure, inasmuch as control group studies of non-exposed workers revealed an identical incidence of anemia.

Intelligent management of tetryl complaints by the industrial medical staff results in a true understanding by the employee of the hazard of tetryl exposure. Public appreciation can be furthered by cooperation of community physicians.

Conclusions

TETRYL dermatitis is a major problem in the shell loading industry as shown by a total of 3,807 cases in four years' experience.

2. Necessary transfers of dermatitis cases from tetryl exposure are a production as well as a medical problem.

3. "Hardening" or acquired tolerance to tetryl exposure has been difficult to evaluate and unpredictable.

4. Most satisfactory controls have been process engineering, housekeeping and enforcement of hygienic measures.

5. Tetryl exposure has resulted in no systemic disease in our experience.

References

1. WITKOWSKI, L. J., FISCHER, C. N., MURDOCK, H. D.: "Industrial Illness Due to Tetryl." *J.A.M.A.*, 119, 1406, August 22, 1942.
2. SCHWARTZ, L.: *J.A.M.A.*, 125, 186, May 20, 1944.
3. HATCH, H. S., et al: "Effects of Tetryl on the Lungs." INDUSTRIAL MEDICINE, 14:3, 189, March, 1945.

Personality Problems

—In Managerial Groups—

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THE CHIEF concern of the operating executive group in a managerial position is with instruments of production and, therefore, with men who facilitate or inhibit production. Managing in industrial situations calls for a good deal of sharing and communicating of experiences and needs. And if it is remembered that planlessness rather than planfulness is still in too large a measure the prevailing practice for dealing with human problems in industry, it is not surprising that many barriers to human understanding appear. They appear in many forms, all of which can be considered as variants of prejudice. Included are preconceptions of old timers and seemingly special demands of new comers; fronts, social masks, or blind spots of executives and hurt prides of workers or colleagues who do not choose to be treated as underdogs. Also included are the designs of efficiency engineers who, along with finance capitalists, tend to disregard the human factor on one hand and the individual and group sentiments of the workers and more humanitarian executives on the other. Operating executives also have to contend with culture conflicts in the managerial as well as the worker group. In fact, what managers are confronted with in the form of prejudice resembles the boy's description of a volcano as quoted by Dr. Herrick in his "Thinking Machine:" "A bit of mountain what is busted and squirts out stuff." The manager's problem is to discover what busted the mountain and what the nature of the stuff squirted is, and arrange so that the mountain stops busting and the stuff stops squirting.

The nature of these problems can only be understood in the settings in which they emerge, and in this manner they will be presented in later illustrations. It is apparent that something related to snafu tolerance is what it takes to be a successful manager in American industry in order effectively to combat problems of this nature.

Good Managers Are Hard to Find

IN SELECTING men for its difficult jobs the Office of Strategic Services used new and relatively radical

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procedures. Three and a half days of skilled observation of the human being as he worked, played, talked, and went through about 35 likelife situational tests was the ordeal that was included in this evaluation. Under the caption "A Good Man is Hard to Find," these methods are described in the March, 1946, issue of *Fortune* magazine. Included in the array of tests used were not only paper and pencil tests and projective techniques but also some situational hurdles. For example, a student was given a task to complete in 10 minutes. Two helpers were placed at his disposal. The helpers were commonly known as Kippy and Buster. They were two junior staff psychologists trained to play their parts. Kippy's role was to do nothing unless specifically ordered, to stand helplessly around, and often to get in the way of possible accomplishment. Buster's role was to be an eager beaver, always offering impractical suggestions and being quick to attack the weakest points in the student's personality. The assumption was that anyone who could come through the tests of snafu tolerance of this nature with a sense of humor was a fit candidate for the frustrations of military life.

Tests of abilities and even projective techniques are occasionally, though less frequently, used in industry, but not these 35 lifelike situations. But anyone who has been in industry any length of time will realize how unnecessary it is to set up any type of lifelike situation. All he has to do is work there for a long enough time and he will see the managers of industry with predicaments as challenging and as persistently overwhelming as those which confronted the students in the snafu tolerance tests given by the O.S.S. There are no Kippys and Busters but their equivalents and even their superiors are found in industry. The possibilities for frustrations, blockings, anxieties, overdominance, confusion, and meaningless volatility are all part of the dynamics that confront a manager in a fair-sized industrial set-up. In addition, he is also confronted sometimes by superiors who themselves have little frustration tolerance but who expect everybody else working for them to have more than enough. Verily, managers, to borrow an expression from Cromwell, have to keep their powder dry.

Psychiatrists used by the O.S.S., whose previous experience had been mostly with the mentally sick, were amazed to discover that the same unhappy experiences that they had assumed made their former patients ill showed up in the life histories of healthy, generally successful persons assessed by the O.S.S. It was in this connection that Dr. MacKinnon used the expression: "The fire that melts the butter hardens the egg." The reaction of these psychiatrists resembles the picture that some economists for the American Manufacturers Association have of the worker. Many of these are still worried about an economic man who is motivated by rational aims, and this in spite of the increasing knowledge concerning psychopathology in normal lives of all of us, including members of the American Manufacturers Association. From cultural anthropology much has been reported concerning the wishful thinking processes found in primitives. From child guidance clinics and child research departments much has been learned of the infantile motivation found in nursery schools and homes with children in them. It is the flourishing of such fantastic concepts of human motivation that is responsible for Roethlisberger's reaction in his book on "Management and Morale" to the effect that "for a time it looked as if only children, primitive people, and the 'insane' were allowed to have sex lives, complexes, habits, customs, day and night dreams, preoccupations, and other manifestations of the non-logical. In business and industry, administrators, executives, and employees seemed to have only cerebral cortices. Their behavior, in every respect, was logical. They never indulged in wishful thinking. Even at the level of collective bargaining, they were manifesting only the purely logical interest of economic gain." They call themselves reasonable, and yet for years they have trembled to think.

In this connection it might be well to recognize that some of the failures in recent bargaining procedures emerged because the underlying motives involved were neither understood nor given an opportunity for release. To a large extent, conferences were concerned with pseudo-realities rather than with actual undercurrents and realities. Even President Truman's fact finding commissions were lacking in their consideration of human feelings and how they can be most realistically dealt with. At any rate, psychologists in industry were certainly not surprised to find that managers are human beings and have human problems of adjusting with themselves as well as with others.

The need for successful emotional loading and unloading to carry on effectively in industry is at least as challenging as some of the snafu tolerance tests used by the O.S.S. Not that it should be this way, but all too often it is. The reason for this condition will appear in later illustrative material presented. As a matter of fact, in American industry one of the chief problems that confronts managers is that there is no managerial group with a "we" feeling. There are techniques which have been developed for the mutual solving of human problems. These are not known to very many members in the managerial groups.

Managers and the Managerial Revolution

IN MODERN industry the gap between the relatively unskilled worker, the trained worker, and the educated trained worker is increasing. It is becoming more difficult to climb up within industry without training. In an increasing number of industries technical knowledge is called for in managerial positions. With the growth of industry, both in size as well as in variety of products and its dependence upon technical knowledge, there has been an increase of dependence on management for production and control of everyday affairs of an industry.

As a consequence, we are now confronted with what Burnham calls a managerial revolution. His contention is that it is the people who are most closely related to the major instruments of production who decide class dominance, power, and privilege, and that the instruments of production are everywhere undergoing a shift away from the capitalists proper and towards the managers. And from his managerial group he excludes finance executives, finance capitalists, and stockholders, all of whom can be said to be managers in certain corporations. Included only are the operating executives, composed of individuals like production managers, quality control executives, plant superintendents, and their associates who have charge of the technical process of producing. It is their job to organize materials, tools, machines, plant facilities, equipment, and labor in such a way as to turn out the product. It is to this group that Burnham argues belongs the future. In this paper our chief concern will be with the problems of this group—the operating executives. However, included within this category is any individual who contributes actively and regularly to the running of an industry. Finance capitalists and owners who carry definite managerial responsibilities will be considered in our discussion as belonging to the managerial group, whose personality problems we are considering.

Realities in the Form of Organization

MOST OF the large plants in the United States can be roughly classified as following one of three forms of organization. Each one of them implicates a different arrangement of position, goal, and function of the various people who operate the business. The three forms can be called functional division, product division, and regional division.

The functional division is the most frequent form of organization. In it there is one division of executives in charge of all manufacturing, another in charge of marketing, and so on for the rest of the divisions of labor in industry. In it individuals are usually responsible to a single executive supported by an adequate staff. In this form of organization the natural tendency for the divisional executives is to become specialists in experience and interests rather than all-around business men. The product and the regional divisions both represent forms of decentralization. In the product division, each of the separate products is set up more or less as an independent business under the divisional executive. He may be responsible for his own manufacturing, marketing, and other functions. In the regional division the divisional executives have direct charge of all phases of business but within a well defined geographical district or region. The product division plan tends to develop more all-around men. The regional plan also tends to develop at least one or more men with wide responsibility and authority but guided by sound general policies. Whether the regional executives are challenged to become well developed, all-around business men or not depends on the degree of control or autonomy given them from the central office.

It might be well to remember that each pattern of organization in a sense can be said to facilitate the development and maintenance of certain stereotyped conceptions concerning women, sex, seniority, race, culture, and related problems. Similarly, wittingly or unwittingly, it can facilitate or inhibit the development of certain personality patterns. It also can encourage or discourage certain styles of leadership and leadership-followership relations. To understand the dynamics of a growing industry and to understand the personality problems of the management group, the life story of the industry and the growth of the individual who now manages it are essential. Before generalizing about the nature of personality problems in management groups, let us first pass in review a number of problems as they emerge.

How Personality Problems Emerge

MORBID DEPENDENCE AND OTHER FORMS OF ATTACHMENT: This is a simple illustration of how some of the factors that play so important a role in family situations creep into business situations. In this particular case a top executive hired a secretary. She served him well for many years. This company grew. Departments grew. Because of her seniority the secretary made certain demands on many of the new executives and supervisors and others in the managerial group. Also, she refused to satisfy the needs as well as the demand of some of these, particularly the new ones. And when anyone in the managerial group tried to overcome her resistance, she went to the top boss, "squealed," as the managers saw it, and the big boss told her, "You have only one boss and you're looking at him." If she got into trouble with anyone and complained and whined about her trouble, he assured her that he would take care of it. The girl got ever more protected, more defensive, more sensitive. He got ever more protective of her, both in intensity and frequency. Distance developed between his office and other executives until a number of managers ganged up and made an open issue of it, after which there was a realignment of duties and relationships and the introduction of a system that made impossible the barrier this girl was getting to be in effective management. That is, from a mushroomed, unplanned growth with an increasing number of managers and executives, the managers were organized into a group. In this instance, the problem emerged because there was, strictly speaking, no managerial group; there was merely an increasing number of managers running an increasing number of departments. But there was no real sharing and communicating for interdependent functioning. The need seemed clear to a good many, but the need for it was not clearly perceived by the top executive, and the development of it was made impossible by the existence of this secretary. In this particular instance the girl as well as the manager was happier after the realignment.

DISPLACED AGGRESSIONS OF A PLANT ENGINEER: A plant engineer in one industry turned over most of his duties to an acting foreman. At the same time he sometimes overrode the foreman to the workers on the jobs. The workers ganged up and advised top management that one boss was enough and they did not want two. The engineer called them all "a bunch of prima donnas" and said if he had his way he would fire them all. The foreman had a feeling of loyalty to the workers as well as to his boss; he found himself hemmed in on both sides. The situation was temporarily relieved by giving the foreman more authority. But a few days later the workers were up in arms again. This time it was because the plant engineer, when working with a draftsman who was making some drawings for the machinists to work with, told him to clarify a few things that were not too easy to understand on the ground that "those jerks are too dumb to understand anything but the simplest forms." The draftsman immediately told one of his machinist friends about the plant engineer having referred to them as "jerks," and a new rebellion was on the way.

It is difficult to understand why a plant engineer in a fair-sized organization would feel the need for running down his men. Not so hard, however, to understand if a knowledge of the engineer's own insecurity and history of anxiety in his own position and his relationship with the key people are understood. The more this man lost prestige with his co-workers, who at times (as he interpreted it) belittled him, the more belittling he did of his people who worked for him. It is also difficult to realize that a man in a position of being a key person, belonging to the managerial group, would hand over so much of his authority to an assistant that he was out of touch with what appeared to others as the more significant phases of his work. This sensation of unreality in the departmental organization invited not only crises and troubles but their reappearance. And it is this intangible atmosphere—lack of firmness in the division of responsibility and acceptance of it—in which a sense of unreality on the part of a good many of the people was developed, and displaced aggression and a belittling process shifted from person to person. In this particular instance, it is well to remember also that the plant engineer himself was a man with relatively little insight into human nature and human motivation. It was next to impossible for him to understand the feelings of another person or even to understand the need for trying. As far as he was concerned, facts and evidence in a literal sense were the only things that mattered. That work-

ers should act in the light of their emotions he could see no sense in, and refused to accept these emotions as facts to deal with: facts are facts, and facts of feelings were merely something to disregard. Subsequently, difficulties emerged, crises developed, and all the plant engineer would say about it was that the people involved deserved to be damned or fired. The fact that his lack of firmness in the organization of his department was one of the chief contributing factors in developing these crises was practically impossible for him to accept or even recognize.

A PERSONNEL DIRECTOR IS SIDETRACKED: A woman was hired to be a personnel director in a relatively small business. The business grew very rapidly. As the industry expanded, more and more departments were added and executives brought in from the outside as well as by promotion from the inside. Ten years went by and the personnel director was almost completely neglected, at least as she saw it. Hiring, transferring, and promoting had become decentralized. Other executives who to some measure had profited from her experience, at least as she conceived it, had outgrown her. A member of the family was placed in charge of the department in which she had a hand, and she looked upon it as having created a Frankenstein because he also outgrew her in authority. A new man tried to introduce some personnel procedures in his own department without conferring with her, and a problem arose. The president himself more or less disregarded her and did not include her in managerial conferences. She was full of righteous indignation and a sense of injustice about having been passed up and surrounded by executives who knew less than she and did not have sense enough to profit from her experience and went on their way without her to the harm of the organization.

There is no doubt, from the point of view of a strict sense of justice, that some of the things this personnel director said were true. But actually what was the problem? Largely it was that of an industry developing rapidly, arriving at new stages of growth without reorganizing or sufficiently modifying its personnel procedures in line with its growing needs. As a consequence, the person who was used to working in a certain manner in earlier stages was "out" because of a lack of technique, or procedure, for dealing more adequately with growing and present needs. This was certainly a personality problem in a managerial group, and yet it could have been dealt with symptomatically. Actually, the story is one of growing pains in a rapidly growing industry with a good deal of unevenness in its growth. Competency was there. Personnel was there. But there was no systematic revaluation of personnel needs or procedures for either selection or promotion or for transference and related problems. Also, there was no systematic use of a managerial group for the general running of the business. Managers conferred individually with top management as they were needed, not with each other.

The Social Structure in Industry

THE FOREGOING examples are illustrative of problems as they develop in industrial situations. They are all problems which can be solved by the application of organized knowledge of human relations.* They illustrate the fact that an industrial organization is a social structure. The nature of the organization more or less predetermines the kind of leadership, the kind of communication, the kind of followership-leadership relations, the amount of interdependence, and the amount of autonomy that exists within the organization. Some organizations are too loosely constructed; hence, the organization is segmented in nature. Others are too rigid and departmentalized, and an insufficient amount of interlocking of relationships exists. Still others have variations in style; some phases of the work are relatively coordinated and integrated, and other phases are completely segmented. In some features they are loose; in some features they are relatively firm. Fairly consistent firmness is a desired goal when obtainable. In many plants there are residues of an earlier organization that have been carried into the present organization in spite of changing needs. That is, in an organization as well as in individual life histories, there are a good many features of behavior and habits surviving that have lost their original meaning. A situation in industry arises calling for a certain set-up. Later, the need disappears; the set-up remains. One can refer to this as a cultural residue in industry, just as one could call it a habit residue in the life history of a single person. Both habit residues and cultural residues are found in industry fairly often. Such residues as remain are barriers towards a unified, coordinated organization. An effective organization, a unified one, is one in which there is coordination characterized by a reciprocal relationship of all features to a total plant situation. Furthermore, the process of relationships involved is well enough systematized so there is promise of continuity in the processing of the structure that exists. Also, though formal channels of communication are systematized, conscious attention is given to informal channels and the two related.

The Resolution of Conflicts in Industry

ANOTHER characteristic that can throw light on the type of industrial organization that exists is the way of resolving conflicts as they appear. A conflict can be resolved by sheer domination, it can be compromised with, it can be appeased or neglected, or it can be integrated. Sometimes getting rid of conflict means nothing more than getting rid of diversity and, as many social scientists have indicated, this does not represent the facing of reality nor does it represent the resolution of conflict. Another way of saying it is that conflicts are normal and are found and expected to be found in any alive situation as they are found in any alive individual. The fear of conflict or a difference represents a type of anxiety that is neurotic in nature. It is possible to conceive of conflict as not necessarily a wasteful outbreak of incompatibilities but a normal process by which socially valuable differences register themselves for the enrichment of all concerned. Conferring is not synonymous with fighting. There are differences which can disrupt if mishandled but, properly handled, can actually be helpful by formulating unifying processes. Loyalty on the part of employees to employers, or employers to employees (in industry, at least) represents at best an expectation of reciprocity. Another way of saying it is that an industrial organization to be a working unit, interdependent and coordinated, should be organized so that initiative, creative imagination, and organizing abilities are used to best advantage. Loyalty *of* employees implies loyalty *to* employees. That is the meaning of reciprocal relationship. With that attitude it is possible to coordinate and integrate planning and performance.

What executives who consistently frustrate indi-

*For a detailed report of how one authoritarian set-up was changed into a democratic, interdependent one by the use of clinical approaches see MELTZER, H.: "Explorations in Humanizing Relations of Key People in Industry," *American Journal of Orthopsychiatry*, 12:3, July, 1942. And "Approach of the Clinical Psychologist to Management Relationships." *Consulting Psychology*, 8:3, May-June, 1944.

viduals working for them, what a managerial group whose individuals get in each others' ways and bump each other off or out, have not learned is a lesson that nations have not learned—that Henry L. Stimson, former secretary of war, expresses exceedingly well in a brief statement published in a recent issue of *Harper's* magazine under the title of "The Bomb and the Opportunity." "The chief lesson I have learned in a long life," says he, "is that the only way to make a man trustworthy is to trust him; and the surest way to make him untrustworthy is to distrust him and show your distrust. And it is from this lesson," he says, "that I draw the conviction that only a direct and open dealing with other nations on this, the most pressing problem of our time, can bring us enduring cooperation and an effective community of purpose among the nations of the earth. It is the first step on the path of unreserved cooperation among nations which is the most important. Once the course of national conviction and action is set in this direction by the example of the major powers of the world, petty differences will be recognized for what they are, and the way toward a real fraternity of nations will be opened."

What Mr. Stimson says about nations is of utmost importance to everybody. What he says about nations is also applicable to persons in managerial positions. Without a conscious effort to eliminate jealousies, rivalries, frustrations—without an increase of naturalness and spontaneity which makes genuine cooperation possible—integrated management is impossible. Just cleaning up the surface here and there represents a pseudo attempt at the solution of a conflict and rarely, if ever, solves a problem in such a way that it does not show up later in a more virulent form.

Production and good will are the urgent needs of our day. On the industrial frontier few groups in America are in a more strategic position to help or hinder increased production and the development of good will as is the managerial group in industry.

Conclusions

MANAGERS ARE people and, as such, have personality problems and conflicts both individually as well as in their interpersonal relations. There are large varieties of personality trends in managerial personalities, ranging all the way from compliant personalities to overdominant personalities. There are also many variations of neuroticisms in managerial groups. Hostility and aggression, frustration and anxiety appear as frequent problems in managerial groups. Pessimism and optimism, fictitious independence and morbid dependence, are also found in many of the key people personalities. The organization structure in industry and in business pre-determines the styles of personality organization, leadership and followership in the organization. In the more promising organizations provisions for formal channels of communication, interacting in a relevant and realistic manner with informal channeling, are provided for. New functions are carefully geared to existing work. All too often the trouble is that there is no managerial group which has learned to cooperate well enough to solve problems. There is a lack of "we" feeling and there is resistance to the realization of the value of conferences as a means of coordination.

2. A frequent source of frustration in managerial groups is the unevenness in the growth of an organization where departments have expanded, in number as well as in size, without changing sufficiently the original set-up of the organization to make possible provisions for new needs. Related is the fact that there are managers in industry, but a managerial group with a "we" feeling, using democratic procedures, is rarely found.

3. In too many industries the meaning of the word "cooperation" is used merely as a synonym for acceptance of higher authority's point of view and does not imply an increase of naturalness and spontaneity, which makes possible an honest kind of cooperation, permitting integrity in all participating individuals. Cooperation does not take place automatically and cannot be left to chance. Personality problems can only be understood by scientific explorations, but they should be based on a study of human data and human techniques for the solution of human problems.

4. Stereotypes in the minds of many concerning colored people, women, and old timers are responsible for a certain lack of flexibility in many managerial groups. And these are difficult to overcome without some clinical work with the individuals. In many instances the combination of individual clinical interviewing and group conferences yields best results.

5. Like workers, managers are human beings and their natures are neither entirely selfish and cruel, nor industrious and cheerful. In industry, as in life, it is well to remember (to use a Willkie expression) that managers as well as workers have in them, most of them a great portion of the time, a large reservoir of good will to themselves, their jobs, their supervisors, and their companies if they are dealt with in a relatively consistent, understanding manner. In the light of this they can build up valid and realistic, if not always hopeful, expectancies.

6. Comes Burnham's managerial revolution and the managers will set the pattern of human relationship in industry. In the meantime, patterns of personality problems as they emerge in industry are influenced by their human surroundings. Workers represent an important dimension of realities they deal with. More important at the time is the emotional atmosphere permitted or instituted by financial capitalists. Paranoid and reactionary executives surround themselves with inadequates who will take punishment. More realistic ones hire what they need and hire the best available; they hire brains and skills.

7. In working with industry, it is well for a psychologist to remember the life history of a company carries with it mores, feelings, sentiments, beliefs, and expressions that become stereotyped or fixed, so fixed that in due time they grow on as a worker; or, as one author aptly put it, "yesterday's consequences become today's causes." Without a realization of the significance of this emotional climate in a department or a plant as a whole, in considering workers or supervisors or managers, only a fragmentary approach towards understanding human relations in industry can be obtained. And this definitely implies an understanding of the informal as well as the more formal channeling systems for communication in industry.

8. Psychologists in industry can be of great help in improving morale as well as the general effectiveness of human relations. But they are not in a position to provide job security or fair procedures for personality evaluation in industries or businesses which are organized and run on opposing principles. In settings which do permit and encourage human values, the psychologist is in a position to contribute significantly towards the development of expressive behavior which, by contributing to the general morale and individual happiness of the workers, contributes towards the development of patterns of values and relationships which promise well for democratic life in America. In the field of human relations, the challenge to psychologists as well as to the managerial group in indus-

try is, in the words of Glenn Frank, to be "not merchants of dead yesterdays but guides into unborn tomorrows."

Bibliography

BURNHAM, JAMES: The Managerial Revolution. John Day Company, Inc., New York, 1941.

"A Good Man is Hard to Find:" *Fortune* 33:3, March, 1946.

HERRICK, C. JUDSON: The Thinking Machine. University of Chicago Press, Chicago, 1929.

MELTZER, H.: "Explorations in Humanizing Relations of Key People in Industry." *Am. J. Orthopsychiatry*, 12:3, July, 1942.

MELTZER, H.: "Approach of the Clinical Psychologist to Management Relationships." *J. Consulting Psychology*, 8:3, May-June, 1944.

ROETHLISBERGER, F. J.: Management and Morale. Harvard University Press, Cambridge, Massachusetts, 1942.

The Present Status of Penicillin

—And the Newer Antibiotics—

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SINCE ALL of you have now used penicillin it is not the purpose of this discussion to review its history or to dwell on those conditions for which it is indicated. The National Research Council, the various manufacturers of penicillin and a voluminous literature have kept you informed on these points. Instead, I thought it would be more profitable to spend our time reviewing the improvements in the product itself, discussing new products incorporating penicillin and their possible value and relating some personal experiences which may be of interest.

Interrupted intramuscular injection is still the most commonly used method of penicillin administration. This still requires hospitalization or nursing service in the home, both serious drawbacks. But in conditions where penicillin is a definitely lifesaving measure, the patient should be hospitalized anyway. An intelligent layman can be taught to give the injections at home but it does interfere with his sleep. The diluent should be small, not more than two cc., and no larger than a 21-gauge needle should be used. We have found that subcutaneous administration using a fine hypodermic needle is less painful and gives equal if not higher blood levels. The almost pure crystalline penicillin salts should be used for this purpose. This has been amply confirmed by Dr. William Hoffman of the Heckton Institute of Cook County Hospital (personal communication). These newer, almost crystalline, salts also have the advantage of being stable at room temperature. The dating on them will be about two years. Dosage of these newer salts is the same as that of the older preparations. They contain up to four times the number of units of penicillin per mg. of salt. In our experience, hyperpyrexia reactions have been almost nil when these preparations are used, even in daily dosage over 2,000,000 units.

For severe sepsis and in bacteremias due to organisms of high penicillin resistance or when dealing with abscesses (e.g. liver and brain) not approachable by surgical means, we still prefer continuous intravenous drip. If this is not possible, continuous intramuscular infusion may be used. By these methods, more constant blood levels are maintained. This may make the difference between success and failure in these unusual situations.

Penicillin tablets and capsules for oral administration are now available. Some are buffered with an alkali. All have been required to pass certain standards of the Federal Drug Administration. While we have found it possible to secure therapeutic blood levels with the various available products, some give higher blood levels with the same dose. All investigators are agreed, however, that when given orally, the total daily dose of penicillin must be four to five times that which is effective by parenteral administration. Thus if 160,000 units per day (20,000 x 8) is the average parenteral dose, the daily oral dose must be 600,000 to 800,000 units for active therapeusis. We have found a minimum of 50,000 units every two hours is required to produce minimal therapeutic blood levels. This materially increases the cost of medication, but if it offsets hospitalization it may be worth it.

Recently, using the crystalline penicillin referred to above, we have given 25,000 units in 20 cc. of tap water orally every two hours and have obtained blood levels adequate for most infections, notably gonorrhea and pneumonia. Using normal subjects Dr. Ralph Dolkart of St. Luke's Hospital (personal communications) has secured similar levels by this method in a sufficiently large series to indicate its usefulness if other methods of administration are not feasible. Thus, by using the type of penicillin mentioned, a simple method of administration is available which requires only about 50% more penicillin as compared with parenteral administration. The oral use of penicillin recommends itself when the drug is used prophylactically, as is being done so commonly now, especially after clean bone and joint surgery, surgery in general and in upper respiratory infections. Whether one should subscribe to this practice or not is a debatable point. But at least oral administration offers a means of saving these patients repeated hypodermic injections. One situation in which we heartily approve of the "prophylactic" use of penicillin is during upper respiratory infections, tonsillitis, removal of infected teeth and tonsillectomy in patients with known or suspected chronic cardiac valvular impairments. By such means we may hope to materially lessen the chances of subacute bacterial endocarditis developing. In children and in infants who can drink from a glass, oral administration of crystalline salts in tap water has obvious advantages. We have obtained adequate blood levels in these little patients from 25,000 units every two hours. In the same subjects 10,000 units every three hours intramuscularly gave adequate blood levels. We owe it to these children to spare them the injections if possible, always remembering that in severe infections we have no choice, at present, other than parenteral administration.

Intrasternal and intratibial infusion has not been successful in our hands, the former because the needle became loose after 72 hours and was more uncomfortable than continuous intravenous or intramuscular drip, the latter because of mechanical difficulties. We were able to keep a tibial screw functioning for two weeks in one out of five attempts.

The peanut oil and beeswax menstrum developed by Romansky undoubtedly delays absorption and thereby prolongs the effectiveness of a single intramuscular dose. Such a preparation is now available commercially and offers an "out" where conditions preclude frequent injections. Our own experience with it has been limited and unsatisfactory and we cannot help but believe that if long administration is necessary, fibrosis at the site of injections will be a factor to be considered.

Other preparations now available containing penicillin are: ointments, troches or lozenges and nose drops. The ointments are for topical application in infected surface wounds, pyodermias and ophthalmic in-

Presented at the INDUSTRIAL HEALTH CONFERENCE, Chicago, April 11, 1946.

Preparations used by us and furnished by the respective manufacturers included penicillin calcium, Schenley Laboratories, Inc.; crystalline sodium and potassium penicillin, Commercial Solvents Corporation; and penicillin sodium containing 90% of the factor, Lederle, Inc.

fections. We have had sufficient experience with these to recognize their value when used against infections caused by susceptible organisms.* Local allergic reaction to the ophthalmic ointments is rather frequent. We have found troches containing 1,000 to 2,000 units each very effective in pharyngitis, tonsillitis and Vincent's angina. In a small series of patients, we have seen only one case of the latter which failed to respond permanently. This patient needed dental work which she refused to have done and apparently the gingival pockets were the source of reinfection. Three instances of uncomfortable local reaction of the oral mucous membranes following the use of troches have been encountered.

In simple rhinitis and pharyngitis we have found the use of a spray containing 1,000-2,000 units per cc. in normal saline effective. The spray is used hourly during the waking period. We have not used the ready prepared nose drops.

In bronchiectasis and stubborn bronchitis, where the predominant organisms are penicillin sensitive, inhalation by an aerusol apparatus results in sufficient improvement to warrant its use. Five minute inhalations every two hours of a solution containing 8,000 u/cc. are given during the waking period. At Wesley Hospital the nebulizer is attached to a rebreathing bag and an oxygen tank, the oxygen flowing at five to seven liters per minute. This same arrangement can be set up at home, or the commercially available aerusol nebulizer may be used. We have had no personal experience with the latter. As the penicillin-sensitive organisms disappear others, notably Proteus, may appear. These have been cleared up by inhalation of streptomycin.

Prolongation of the effect of a single intramuscular dose has been obtained by giving 2.4 gms. of benzoic acid in gelatine capsules 30 minutes before the first dose and 1.2 gms. at four hour intervals thereafter. By this method 50,000 units every eight hours maintained levels satisfactory for gonorrhea, and judging from the reported levels they should be adequate for most pneumonias and streptococcic infections. A potassium aluminum sulfate penicillin mixture was used. Whether the same results would be obtained using sodium or calcium penicillin has not been reported, to my knowledge. It seems worthy of trial.

Dosage

IN GENERAL there is agreement on the recommendations of the National Research Council which I presume are familiar to all of you. These have undergone revision within the past year and the revised list is readily available from the various penicillin manufacturers. We cannot agree with the dosage range recommended for súbacute bacterial endocarditis. Our experience with 34 cases over the past three years has shown that, in our hands at least, the optimum recovery rate of 85% can only be attained by daily doses of 500,000 to 2,000,000 units and occasionally more. Whatever the recommended dose for any disease may be the point to bear in mind is that if the dose selected to begin with does not result in a prompt response larger doses are indicated. Also it must be borne in mind that doubling the dose does not double the penicillin blood level. It requires about four times the previous dose to do this.

Interesting Cases

DURING the past year we have had a patient with renal colic in whom no stone or other source of obstruction could be found. S. viridans was isolated from the urine. Several weeks of penicillin by continuous intravenous drip in doses of 500,000 to 1,000,000 units per day, resulted in disappearance of the colics for almost a year.

Dr. Benjamin Boshes of the Department of Neurology has recently had a patient with a viridans meningitis and bacteremia who recovered after prolonged administration of 500,000 units per day.

One of the most interesting and unusual results we have had was in a case of portal pylephlebitis and/or liver abscess. Only five such cases so treated could be found in the literature. Two of these recovered. The important point here, we believe, was the immediate administration of 1,000,000 units per day. One previous case of multiple liver abscess undiagnosed ante mortem received 500,000 units per day. If the postmortem culture from the abscess which showed E. coli was correct and not a postmortem invader, penicillin would not have been effective. When streptomycin becomes generally available, we may have two very important allies in a condition of high mortality rate which is not amenable to surgical attack.

Streptomycin

THIS NEW antibiotic is similar to penicillin in that it is produced by a fungus, Actinomyces griseus. It was isolated by Waxman in this country and first reported in 1944. Its chief interest lies in its effectiveness against certain of the penicillin-insensitive organisms, particularly of the gram negative group. So far the following organisms or diseases appear to be inhibited or cured by streptomycin: Friedlander bacillus, Borrelia Novyi of relapsing fever, the organism of Weil's disease, murin pertussis, Pseudomonas, Aeruginosa, Aerobacter aerogenes, E. coli, Proteus vulgaris, Salmonella group, Shigella group, Typhoid group, Hemophilus influenzae, tularemia and brucellosis. Some strains of streptococcus and staphyloccus are relatively sensitive. In the experimental animal, tuberculosis is encouragingly affected, but results have been disappointing in pulmonary tuberculosis in man. Open tuberculous lesions of the kidney, lymph node, sinus tracts and mucous surfaces have shown promising response.

Administration is the same as for penicillin. Blood levels are higher in proportion to administered dose if compared on the basis of units. Excretion is mainly through the kidneys, being 50-75% in 24 hours. Designation of dosage in terms of units is being discarded in favor of grams. Doses of one to four gms. per 24 hours are commonly required according to present indications. A gram is equal to 1,000,000 units. No means of giving it orally and securing therapeutic blood levels has yet been found. However, it is not destroyed in the intestine and will act on susceptible organisms there. Hence combined oral and parenteral administration is advised in typhoid fever and allied infections.

We have already mentioned our experiences with it in inhalation therapy. In addition we have observed one case of tularemia, one of E. coli peritonitis, one of aerobacter aerogenes infection of the urinary tract, one severe E. coli septicemia and several E. coli infections of the urinary tract which have responded to streptomycin. In addition, three cases of subacute bacterial endocarditis have been treated, reports on which are in process of preparation. All three had atypical strains of streptocci highly or completely penicillin resistant. One died in congestive failure but showed bacteria free calcified lesions of the aortic valve. Two are living and apparently cured. At present streptomycin is not generally available.

*Penicillin ointment and ophthalmic ointment supplied by Schenley Laboratories, Inc.

Tyrothricin

THIS ANTIBIOTIC, discovered by Dubos in 1939, was first known as gramicidin. It is elaborated by Bacillus brevis, a spore-bearing gram negative inhabiter of soil. It is now known to be composed of two substances tyrocidine and gramicidin. It is not soluble in water but soluble in alcohol. Clinically it was originally used by adding an alcoholic stock solution to triple distilled water, which results in a colloidal suspension. The alcoholic solution is quite stable, the alcohol-distilled water suspension reasonably so. Recently an aqueous solution has been prepared which is stable for several months.

Very early it was found to be too toxic for parenteral use and with the advent of penicillin, interest in tyrothricin was almost lost. However, its local use has recently been revived because it is relatively cheap, readily available and is effective against some penicillin resistant organisms. It should have a place in the armamentarium of surgeons, orthopedists and physicians and surgeons in the field of industrial medicine. It is effective against most strains of Diplococcus pneumoniae, Streptococcus pneumoniae, streptococcus salivarius and to some extent S. fecalis and Staphyloccus aureus. The latter organism is relatively resistant but most strains are affected by the recommended concentration 10.5 mg. per cubic centimeter. Because of its hemolytic action it cannot be used in any situation where it will come in contact with the blood stream, but it is non-toxic for other tissues. Its use, therefore, centers around surface wounds, sinus tracts and body cavities where there is no danger of its entering the blood stream directly. Its effectiveness is not decreased by tissue fluids. It may be applied freely on wet dressings in concentrations of 0.5-1.0 mg. per cc. It may be instilled into the bladder, pleural cavity, paranasal sinuses, ear, conjunctival sac and used as a nasal spray. Incorporated in a petrolatum-lanolin or water washable base it is a satisfactory dressing for indolent ulcers (particularly varicose), infected wounds and as a topical application in impetigo and infectious eczematoid dermatitis. Many investigators are enthusiastic over its use in preparing infected wounds for skin grafting. Pilonidal sinuses which have resisted surgery have been healed. In chronic or post-operative osteomyelitis the results appear to be more favorable than when penicillin is used. After irrigating the surface wound or sinus tract to remove cellular debris, application is made by wet dressing or irrigation. This cleansing of any surface or accessible wound before application is important. Dr. Schnute of the orthopedic service at Wesley Hospital tells me he is now using it frequently in such cases. There are reports of its use with favorable results in ophthalmological conditions such as dacryocystitis, pneumococcic conjunctivitis, dendritic keratitis (combined with cauterization), pneumokeratitis, epidemic keratoconjunctivitis and blepharitis. Since it may be instilled as a solution four to six times a day and exerts its action much more rapidly than penicillin and, so far as I know, does not produce local allergic reaction it might be considered superior to penicillin ointment or solution in these conditions. Because of its more rapid action it may be superior to penicillin in post-operative mastoid cavities. However, since it cannot be used parenterally, it cannot prevent mastoid surgery as penicillin may. Finally its use is certainly to be considered in any local infection which has resisted penicillin if the organism is known to be susceptible to tyrothricin.

Just as is the case with penicillin it is necessary to know what the offending organism is.

Furacin

THIS IS a derivative of furfural available in ointment and soluble dressing form for application to infected surface wounds. Very little has appeared in the literature so far, but it appears to be effective against a number of gram positive and negative organisms. It appears to be both bactericidal as well as bacteriostatic. I have had no personal experience with it, but it is worthwhile to be on the lookout for further reports and to try it yourselves since surface wounds are so common in your practice.

Traumatic Rupture of Cardiac Valve

—Report of a Case—

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IT IS no common knowledge that the heart may be damaged by non-penetrating injuries of the chest. It seems difficult to realize that the heart may be injured by a thoracic trauma that produces no visible bruise of the skin or fracture of the ribs. Therefore, cases as the one reported may cause medicolegal difficulties.

Factors which determine the effects of the trauma are: the age of the patient, the kinetic energy rather than the mass of the injuring object, and the extent of the area of impact. In younger patients with a more resilient thoracic wall traumatic heart injury without contusion of the protecting tissues is more likely, especially if the area of impact is large.

The heart may thus be injured either by transmittance of the direct blow or by a sudden increase in the hydrostatic intracardial pressure, resulting in almost every cardiac damage. Symptoms may appear immediately or after a silent period of varying duration. Instantaneous death may result from primary shock, asystole or ventricular fibrillation, or the course of the post-traumatic disease may be fatal later on from different causes after varying periods. According to Moritz[1] the probability of a blunt chest injury causing coronary thrombosis is exceedingly remote. Where the heart injury consists of rupture through hydrostatic effect, this rupture may be localized at any place in the heart, independent of site of impact. Urbach[2] (cited by Moritz) lists rupture of cardiac valves as least frequent of all ruptures, and

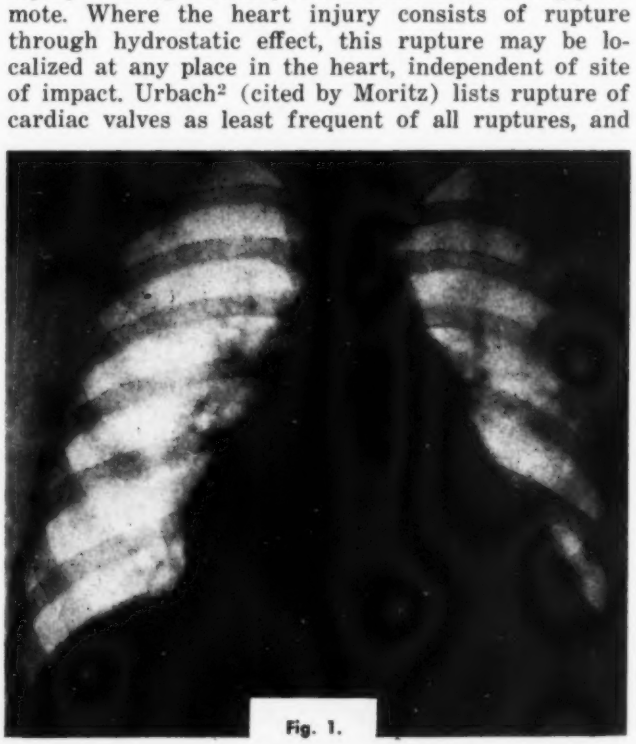


Fig. 1.

Adam[3] reports rupture of the mitral valve as second in decreasing order of frequency in sites of traumatic valvular rupture, after the aortic valve. Mitral valve damage was reported by Barber and Osborn.[4] Some authors, among whom is Formyne,[5] think that traumatic rupture occurs only in a previously diseased valve. Wybauw[6] reported a case of traumatic insufficiency of the aortic valve with a latent period of 12 days in a previously athletic youth.

Of 168 cases collected from the medical literature by Bright and Beck[7] up till 1935, only 12 patients survived longer than a few months.

Clinical symptoms will depend greatly on the severity and the location of cardiac injury. Immediate dilatation seems to be a most constant reaction to contusion of the heart according to Bright and Beck. Frequently the first manifestation is a disturbance of consciousness ranging from a slight giddiness to a complete unconsciousness. A shorter or longer silent interval follows the sometimes mild initial symptoms. Then, serious manifestations may occur acutely or gradually, suggesting either acute cardiac disease or "acute abdomen." Such manifestations are precordial pain or substernal oppression, prostration, nausea, vomiting, palpitations and symptoms of profound shock. Usually, within 48 hours the temperature is found elevated, the white blood cell count increased and the erythrocyte sedimentation rate accelerated as is the case in coronary occlusion with myocardial infarctation and in severe contusions in other body regions. Dilatation of the heart as revealed by fluoroscopy or/and telephoto of the heart and electro-cardiographic changes will seldom be absent. Many interesting electrocardiographs in cases of heart trauma were reported by Sigler.[8]

Barber[9] stresses the importance of every symptom occurring after chest trauma, especially of dyspnea, oppression and anginal pain.

Fig. 2.

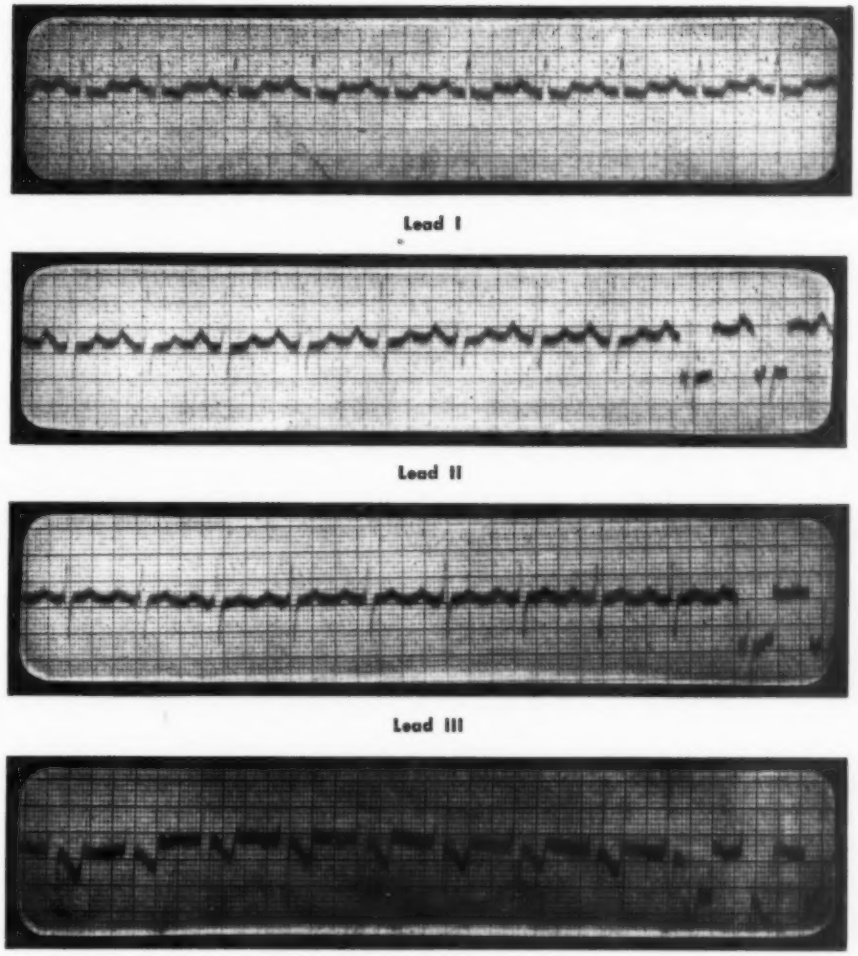


Fig. 3.

The diagnosis of traumatic heart injury should not be difficult as long as the occurrence is not at all denied. Heart disease due to other causes should be carefully ruled out by every means, especially by conscientiously and repeatedly taken anamnesis in cases where a possible traumatic heart injury is compensable. Pre-employment examinations in industry when properly recorded are in these cases extremely valuable.

The following medicolegally difficult case led to this publication:

A 20 year old laboratory worker of East Indian descent was admitted to our hospital August 14, 1945, at 9:00 P.M. At about 2:00 A.M. a five-gallon tin full with gasoline fell from a height of 6 metres, hitting him in the chest at the moment when he was veering out the rope. There was a little immediate pain lasting only a few minutes after which patient proceeded per bicycle carrying the tin to the laboratory and resumed his work there. At 7:00 A.M. he felt feverish, was shivering although he had no shaking chills, was dyspneic and complained about palpitations and headache. At 8:00 P.M. he visited our first aid station and was hospitalized by the doctor on duty.

Patient denied any previous infectious diseases, especially rheumatic fever or any other rheumatoid pain or obscure fever. He had had no infection of the upper respiratory tract for the last six months and no teeth had been extracted. The patient was known to our medical department since his extensive pre-employment examination June 14, 1945, at which time no abnormalities were found on physical examination, and blood pressure, pulse rate and erythrocyte sedimenta-

tion rate were all within normal limits. Blood Wassermann and Kahn reactions were negative. Between June 14 and August 14 he had never visited our polyclinic and had had no complaints whatsoever.

Patient was well-developed and well-fed. There was some dyspnea and respiration with the alae nasi. The pulse rate was 92 p.m., the temperature 37.9° C, the respiratory rate 39 p.m. and the blood pressure 120/60. The skin was warm and moist. There were no petechiae and no edema. There were no pathologically swollen lymph nodes. The ictus cordis was visible and palpable in the 6th intercostal space just beyond the mid-clavicular line. There was a systolic thrill at the apex. To percussion the right heart border extended 1 cm. beyond the right sternal border. A high-pitched systolic murmur could be heard at the apex, transmitted to the left axilla and there was a soft presystolic murmur. The heart action was somewhat tumultuous and the rhythm was regular. There were no abnormalities in the abdomen.

Urinalysis revealed albuminuria (1 plus), urobilinogen and in the centrifuged sediment 6 leucocytes and 6 red blood cells.

Hemoglobin content was 12.3 grammes per cent, white blood cells numbered 9,450 of which 6% were eosinophils and 6% stab forms. Erythrocyte sedimentation rate was 16 and 42 mm. after one and two hours respectively. No malaria parasites were found and no microfilaria were present in day- or night-blood. Repeated blood cultures were negative. Incidentally, eggs of necator and trichocephalus were found in the stools.

The next two days temperature, pulse rate and respiratory rate increased and a gallop rhythm developed. Telecardiogram of the heart August 16 (Fig. 1) revealed dilatation of the right ventricle, the left auricle, the left ventricle and bombing of the pulmonary artery.

Crepitation in both lung bases could be heard. The liver was enlarged, the spleen was not palpable. Most probable was an injury of the mitral valve.

Treatment consisted of oxygen in an oxygen tent, the required sedation and, prophylactically, penicillin, to prevent secondary bacterial endocarditis.

August 18 hepatic pain suggested congestion. Diuresis was insufficient. This was stimulated by 50% dextrose intravenously, ammonium chloride by mouth and bi-weekly injections of a mercurial diuretic. Prophylactic administration of penicillin was discontinued August 21. Patient improved gradually. September 9 he could be discharged in fairly good condition, able to walk and dress without dyspnea. There was no precordial pain, pulse rate was below 80 p.m., the liver was enlarged 2 cm. below the costal margin, there was no visible edema and the diuresis was sufficient. The heart was still markedly enlarged with a systolic murmur at the apex. Blood pressure was 115/55. The R.B.C. sedimentation rate was within normal limits.

Patient was readmitted September 22 complaining about precordial pain, also when resting. He was dyspneic and cyanotic. October 8 the urinary output was again insufficient (450 cc. p.d.) and patient was restless and anxious. He had a tachycardia of 124 p.m. Blood pressure was 120/75. There was pitting edema of the sacral region. The liver was enlarged three and a half inches below the costal margin. There was a gallop rhythm.

After complete digitalization, oxygen therapy, diuretics and sedation, patient improved again and could be dismissed October 29. He then required a maintenance dose of 0.100 digitalis (U.S.P. xii) d.d. and 5 grammes potassium nitrate with which he had a sufficient diuresis and was able to do sedentary work and walk for 20 minutes without dyspnea or precordial pain. The heart was still markedly enlarged October 25 (Fig. 2). An electrocardiogram taken on the day of dismissal (unfortunately the apparatus had been out of function previously) (Fig. 3) revealed a pulse rate of 84 p.m., sinus rhythm; prolonged P-R conduction time of 0.24 sec. In lead 2 the P wave was four and a half mm. high and 0.16 sec. wide. QRS was 0.06 sec. R spike was 12 mm. high. There was no axis deviation. ST was depressed in the first and precordial lead. This electrocardiogram, showing the effect of digitalis medication, is compatible with a mitral vitium.

Patient was repatriated to Surinam and at the moment (May, 1946) is feeling as well as on the day of dismissal from the hospital.

In this case the chest wall of this loosely-built 20 year old patient was resilient, the area of impact was large and presumably the thoracic wall gave way to the blow of 76 kg. metre (Kinetic energy $= \frac{1}{2} \times \frac{9}{9.81} \times v^2$ in which $v = \sqrt{2x9.81 \times h}$) travelling with a velocity of 10.8 metres per second.

The onset of symptoms was gradual. The rise of the body temperature was rather acute with a shivering suggesting an endocarditis.

Repeated blood cultures, however, were sterile.

The connection of the trauma with the subsequent disease was such that the latter was accepted as directly due to the accident, so that the resulting incapacity was fully compensable.

References

1. Moritz: Pathology of Trauma, p. 145.
2. Urbach; Adam l.c.
3. Urbach; Adam l.c.
4. Barber and Osborn: "Mitral Stenosis Result of Trauma." *Guy's Hospital Rep.*, 87, 510, 1937.
5. Formyne: "Commotio Cordis." *Nederl. Tydschr. v. Geneesk.*, p. 763, 1940.
6. Wybauw: Discussion. *Nederl. Tydschr. v. Geneesk.*, p. 764, 1940.
7. Bright and Beck: "Non-penetrating Wounds of the Heart." *Am. Heart Journal*, 10, 293, 1935.
8. Sigler: "Trauma of the Heart due to Non-penetrating Chest Injuries." *J.A.M.A.*, 119, 855, 1942.
9. Barber: "Contusion of Myocardium." *Brit. Med. J.*, 2, 520, 1940.

The Ramazzini Society

THE Ramazzini Society was established in 1942. "Physicians of the Americas engaged in occupational disease work and medical industrial hygiene have organized themselves into a Ramazzini Society with one objective, this being the sponsoring of an annual Ramazzini lecture for the purpose of honoring the memory and achievements of Bernardin Ramazzini, the patron saint of industrial medicine."

Bernardin Ramazzini (as stated in Chapter 14, "My Boss," of DR. CAREY P. McCORD'S recent book "A Blind Hog's Acorns") was born in Capri in 1633, graduating in medicine in Parma in 1659. Although he was at first discredited and maligned by his professional colleagues, he spent much time among the craftsmen of his community, whom he studied at their various occupations. He soon became characterized by his most famous question (which is applicable today to occupational histories): "Of what trade are you?"

In 1700, as a result of the great amount of practical experience he had accumulated, his book "De Morbis Artificum Diatriba" (The Diseases of Artificers) was published and has since become the early gospel of the industrial hygienist. It is interesting to note that in the front of this book (which was Ramazzini's greatest contribution to the literature of occupational diseases, he addresses a little note in poetry to the book itself, as follows:

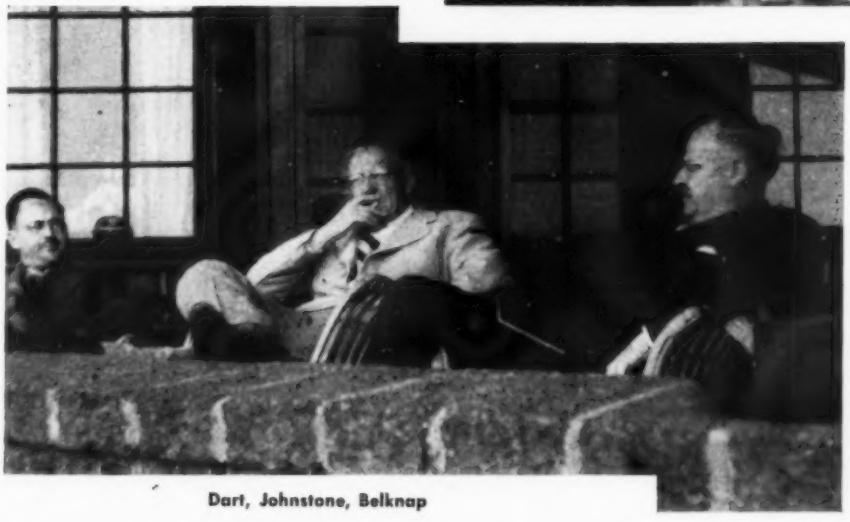
St. Clair Inn, St. Clair, Michigan

Sunday Morning on the Sun Porch

McConnell, Fox, Smyth

Above: Dart, Selby, Johnstone, Peterson, McCord, Sappington, Belknap, Legge, Lutz

Below: Legge, Fox



Dart, Johnstone, Belknap

Cunningham, Selby

Machle, Peterson, Lutz, Sappington

Johnstone, McConnell, Cunningham

The "Servants": McCord, Selby

Sappington, Legge

Lanza, Kehoe, Machle, Peterson, Legge

McConnell, Lutz, Belknap, Sterner

Sappington, Johnstone, Machle, Peterson

(Informal Candid Camera Snapshots by Sterner)

"Since you itch and are burning to be published,
First pay heed to an anxious father's warning.
Briefly here's what the fates have destined for you.
Since you vow that you bring them something novel,
All the learned at once will run to greet you.
Two short pages, I think, are all they'll read through,
Then they'll fling you to factories or by-streets
Where the poorest buy sausages and fish-sauce.
Yes, you're fated to wrap up something greasy.
Still, cheer up, for the same thing often happens
Now to massive imposing legal Pandects.
All-receivers they are; they wrap up mackerel,
Or we screw them to hold the grocer's pennorth,
Pepper, maybe, or smelly seed of cummin.
You must know that you were born in grimy workshops,
Not in elegant mansions of our betters,
Not in glittering courts where chief physicians
Lay down laws for the cooks but sit down nowhere.
Trust me, then, you will suffer this more lightly
Than do books that can boast of prouder titles.
If they read you and straightway send you packing
Back to workshops, remember—*you were born there.*"

In his book, Ramazzini has given sincere and accurate descriptions of the occupational diseases of the various trades. As DR. MCCORD has aptly said (in "A Blind Hog's Acorns"): "From no easy chair did this industrial hygienist predict the coming of a period of occupational diseases and ills of industry. Instead, he lived among the workers, detecting their occupational disease ills, ferreting out precise causes, and creating means of prevention. Without scorn of the modern physician, in truth it may be said of this sire that his grasp of the needs and opportunities of industrial medicine exceeded that of 95% of the physicians of today." Thus it is that Ramazzini became the patron saint of industrial hygiene.

ONE of the early established principles of the Ramazzini Society was that there should be no officers, but that each year one or more "servants" were to be appointed to carry on the necessary correspondence and other matters to keep alive the spirit of the patron saint among the members of the society. It thus became the duty of DRS. CAREY P. MCCORD and CLARENCE D. SELBY to carry out these activities during 1942, 1943, 1944, 1945, and 1946. Because of wartime contingencies, it was not possible to arrange a meeting until May, 1946.

Meanwhile the Society developed its objectives and principles. In the Ramazzini Society, as stated by some of the earlier members, there is no place for personal ambitions, for there are no officers or offices, no scientific programs, no by-laws as such, no dues, and therefore no funds to be disbursed. In fact, one of the tenets of the society is to abolish the "ten-pound look—hair curlers and pompous stuffed-shirtism."

It is realized that there are many others over the land, non-members, who are qualified by attainments and devotion, some of whom may later become members. The present roster is as follows:

DR. JOSEPH CHARLES AUB, Boston.
DR. E. L. BELKNAP, Milwaukee.
DR. A. G. CRANCH, New York.
DR. J. G. CUNNINGHAM, Toronto, Ontario.
DR. CECIL K. DRINKER, Boston.
DR. JOHN H. FOULGER, Wilmington, Delaware.
DR. LEROY U. GARDNER, Saranac Lake, New York.
DR. ALBERT S. GRAY, Hartford, Connecticut.
DR. EMERY R. HAYHURST, Columbus, Ohio.
DR. RUTHERFORD T. JOHNSTONE, Los Angeles.
DR. ROBERT A. KEHOE, Cincinnati, Ohio.
COLONEL A. J. LANZA, New York.
DR. ROBERT T. LEGGE, Berkeley, California.
DR. CHRISTOPHER LEGGO, Oak Ridge, Tennessee.
COLONEL WILLARD F. MACHLE, New York.
COMMANDER WILLIAM S. MCCANN, Rochester, New York.
LIEUT. COLONEL WILLIAM J. MCCONNELL, New York.
DR. CAREY P. MCCORD, Detroit.
DR. WILLIAM D. MCNALLY, Chicago.
DR. STUART F. MEEK, Detroit.
DR. PAUL A. NEAL, Bethesda, Maryland.
DR. CARL M. PETERSON, Chicago.
DR. ANDREW R. RIDDELL, Toronto, Ontario.
DR. OSCAR A. SANDER, Milwaukee.
DR. C. O. SAPPINGTON, Chicago.
DR. R. R. SAYERS, Washington, D. C.
COLONEL LOUIS SCHWARTZ, Bethesda.
DR. CLARENCE D. SELBY, Detroit.
DR. HENRY F. SMYTH, Philadelphia.
DR. JAMES H. STERNER, Rochester.
DR. W. F. VON OETTINGEN, Bethesda.

It is proposed to hold the annual meeting, at which the principal activities will be a "communion of the spirits," with only one planned event, the Annual Ramazzini Oration.

THE first meeting of the society was held on May 17-20, 1946, at the St. Clair Inn, St. Clair, Michigan. A chartered bus picked up the members at the Wardell-Sheraton Hotel, Detroit, on Friday afternoon, May 17, following the beautiful scenic route 50 miles northeast along Lake St. Clair and the St. Clair River to the St. Clair Inn. Here special arrangements had been made for an evening dinner, before which were served libations and antepasto which would have delighted the soul of Ramazzini himself. After dinner came the first Ramazzini Oration by DR. ROBERT T. LEGGE, of Berkeley, California, on "Bernardini Ramazzini: His Life, Deeds and Book"*—a very scholarly presentation. Present were DRS. BELKNAP, CUNNINGHAM, JOHNSTONE, KEHOE, LANZA, LEGGE, LEGGO, MACHLE, MCCONNELL, MCCORD, PETERSON, SAPPINGTON, SELBY, SMYTH, and STERNER, with DRS. EARL LUTZ and EDWARD DART as guests. The rest of the evening was spent in small talk, philosophy and stories.

On the following day, there were boating and fishing, renewal of friendships, with games of modern appeal interspersed. Everywhere during the activities, whenever refreshments were served, there was the cry of "posca—good old posca." ("Posca" has been described as the most villainous of drinks. It is composed of diluted vinegar; it was taken morning, noon and night, by stout-hearted Ramazzini.)

On Sunday, May 19, the last full day, Nature being very kind, with sunlight and balmy air, many were to be found on the sun porch exchanging experiences and tales; boating and fishing; and also there was a Scotch foursome at golf, RAMAZZINIANS WILLARD MACHLE and CARL PETERSON beating RED JOHNSTONE and CLARENCE SAPPINGTON two up, after being all square at the 17th.

The final communion occurred on Sunday evening with all present, exchanging banter and many finely told tales, enjoying viands and libations of the best, and all deeply regretful that such a pleasant gathering should come so quickly to an end. It had been decided previously that the "servants" for the next year would be RAMAZZINIANS PETERSON and SAPPINGTON.

On Monday morning the bus went back again along the same beautiful scenic highway to Detroit, where many stayed over for the evening dinner of the Michigan Industrial Hygiene Association, at which DR. ROBERT T. LEGGE gave a very fine presentation on "The Historical Development of Industrial Hygiene. (See *American Industrial Hygiene Association Quarterly* for June, 1946.) And after many words of praise for the SERVANTS MCCORD and SELBY, the group separated with eager anticipation of next year's Rendezvous.

*This RAMAZZINI ORATION is to be published simultaneously in the August, 1946, issues of *Occupational Medicine* and INDUSTRIAL MEDICINE.

Cardiovascular Impairments

—In the Industrial Worker—

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PERSONS with heart disease constitute a large and increasing group in our population. This is chiefly because the incidence of the degenerative forms of heart disease—hypertensive and coronary—increases steadily with increase in the average age of the population. In addition, rheumatic heart disease, while its general incidence is decreasing, continues to cause disability, as well as death, among young persons and presents an important problem in vocational guidance and training. To this group, we must now add those persons with congenital cardiac lesions who are being rescued by our surgical colleagues from early demise but who, nevertheless, after their best efforts, don't make good lumberjacks or longshoremen!

The normal heart has enormous reserve capacities. Even after heart disease is well established and obvious on examination, cardiac function may remain adequate for all but the most strenuous of activities. Further, with proper management, deterioration of function may be very slow indeed. This means that the average heart case may look forward to many years of survival—and quite useful survival—after his disease is first discovered. For example, patients with hypertensive heart disease commonly are recognized in their fifth decade and may count on, on the average, 10 or more years of comparatively normal existence thereafter. A similar, but often shorter, period of useful survival follows the discovery of coronary heart disease. Rheumatic heart disease is, of course, an affliction of youth—manifesting itself overtly during adolescence. Subsequently, the victim may look forward to 10 or 15 years of comparatively useful existence before serious invalidism and death ensues.

Granted that these generalizations are more or less correct, it is clear that the proper placement of these individuals in industry demands the most careful consideration. On the one hand, it is important that cardiac patients be not discarded as economic assets to the community before their waning cardiac reserves render this step essential. On the other, it is equally important that their placement be so effected as to retard rather than accelerate the course of their disability. Parenthetically, it should be emphasized that if the exertional stresses be properly chosen and not excessive, their application to patients with moderate degrees of cardiac disease will benefit them in the same way that the proper prescription of exercise will benefit any sedentary individual.

The actual placement of these persons in industry is naturally an individual problem. It entails first a careful diagnostic study, ending with an accurate evaluation of the functional and therapeutic status. Consideration must then be given to the type of occupation for which the individual has been trained. A final factor of great importance is the patient's emotional reaction toward his disease. This is perhaps more important when the organic disability resides within the cardiovascular system than in any other type of patient. It is unfortunately true that a great many potentially useful individuals with heart disease are converted into heavy economic liabilities by the induction of an anxiety state about their condition.

Physicians interested in this problem will find excellent criteria for the proper classification of cardiovascular patients in the publications of the New York Heart Association. Two years ago, Kresky and Goldwater, at Bellevue, made a most useful study along these lines. They went over the records of some 2,000 patients attending the adult clinics of the New York Heart Association in 1941. They classified these patients according to their:

Functional Capacity

CLASS I: represents patients with cardiac disease and *no limitation of physical activity.* Ordinary physical activity does not cause discomfort.

CLASS II: represents patients with cardiac disease and *slight limitation of physical activity.* These persons are comfortable at rest, but on ordinary physical exertion, experience discomfort in the form of undue fatigue, palpitation, dyspnea or anginal pain.

CLASS III: represents patients with cardiac disease and *marked limitation of physical activity.* They are comfortable at rest but have symptoms with less than ordinary activity.

Of the men studied, those who were working constituted 70% of those in CLASS I, 47% of those in CLASS II, and 18% of those in CLASS III.

A high proportion of the women were housewives, so that those working constituted a *still* higher percentage of each group: 90% of CLASS I, 87% of CLASS II, and 73% of CLASS III.

Since functional capacity denotes the patient's appraisal of his physical limitations due to his cardiac disability, it is clear that this factor is actually not the deciding influence in determining whether or not the patient works. In the men, economic necessity and in the women, the size of the family and the necessity for running the house, are usually the ruling motive. Obviously, many persons in this study were working when they should not have been, and still more were undertaking heavier loads than were good for them. For the benefit of such persons, a WORK CLASSIFICATION UNIT was set up. In this connection, the THERAPEUTIC CLASSIFICATION of the New York Heart Association was utilized. This is an excellent guide in the management of cardiac patients, being a specific prescription for the amount of physical exertion judged advisable by the physician. Cases are classified thus:

Class A: Physical activity need not be restricted.

Class B: No unusually severe or competitive efforts are permitted.

Class C: Ordinary physical activities are moderately restricted.

Class D: Ordinary physical activities are markedly restricted.

A break-down of 80 cases in this fashion, showed that half of those whose ordinary physical activities should be moderately restricted (*Class C*) were actually doing manual labor.

It is, of course, clear that such an estimate of the amount of work a patient should do—that is, the therapeutic classification—is of little value unless he can be provided with a job which does not require more work than is considered advisable. Often, proper placement means considerable retraining and, in the degenerative group, retraining at an age when this is difficult or impossible. One point which was brought out was that the travelling time of these workers was quite excessive, averaging 1½ hours. It would seem to be an important principle that the working cardiac patient live close to his work. He may thereby conserve his energies for the job itself. It is encouraging to know that, from their survey, Kresky and Goldwater concluded that cardiac patients with a Functional capacity of CLASS I or II and a therapeutic classification of A, B or even C, may continue in occupations demanding

Presented at a meeting of the Industrial Medical Section, Ontario Medical Association, May, 1946.

up to moderate physical activity, provided that their working hours be slightly limited and their travel time be not excessive, without endangering themselves.

Probably you will all agree that it would be nice to have industrial workers checked and classified as was done in the New York project. Practically, the services of large cardiac clinics are seldom if ever available when required and the job of such classification falls on each of you individually. Some of the concrete problems that come up should be mentioned.

High blood pressure is one of the commonest signs requiring assessment. Let us assume that hypertension is found to be present in an individual who has no complaints—who is functionally CLASS I. It is of course important to determine the presence or absence of overt causes for this abnormality—gross kidney pathology, or serious endocrinopathy. Particularly, a study of the eye grounds is called for, since changes there furnish our most accurate guide to prognosis and therapy. Granted that hypertension is demonstrated to be an isolated finding—that the kidneys are concentrating well, that there are no gross urinary abnormalities, that retinal changes are absent or minimal and that cardiac function be normal, there is then no contra-indication to such an individual working. His therapeutic classification would be *B*, of course, since unusual or competitive efforts should be prohibited. Consistently high pressures, particularly diastolic pressures of over 110, are of course not compatible with a continued absence of complicating features, but a single high reading, no matter how high, should never be an occasion for alarm. In any hypertensive subject, the important thing to assess is the state of vascular compensation. As long as a patient with hypertension can be shown to be tolerating this extra strain well—as evidenced by sound cardiac function, an absence of gross nervous symptoms and of eye ground changes—there need be no fear of important vascular complications or accidents, for the healthy arterial system can withstand with impunity almost any given pressure. That this is literally true has been shown experimentally, in that a healthy cerebral artery has tolerated without rupturing a pressure of 3,000 mm. of mercury.

It seems to me particularly important that the hypertensive be guarded from too much worry, responsibility or anxiety rather than from physical stresses. Most of these persons belong in the group of pathological worriers—they do not tolerate responsibility well and they are very prone to develop chronic anxiety states about their own health. These people are often particularly "useful citizens" — enthusiastic, hard-working and hyper-conscientious—at least until they develop "high blood pressure phobia." They should be frankly told that they are manifesting vascular tendencies which indicate over-activity of their vasomotor systems. They should be warned against excesses and advised of the value of recreation and relaxation. At their periodic check-ups, no stress should be placed on the actual blood pressure readings, for these are completely unimportant. In the average case, under proper management, vascular compensation *will* be maintained for 10 or more years after hypertension is first found to be firmly established and this period may well be the most productive in that individual's life.

Coronary heart disease is next on the agenda. It is an almost equally important problem in the worker over 40 and indeed may frequently be found in association with hypertension. This is only natural since both diseases have their chief incidence in the latter half of life. It should be recognized however that atheroma is an intimal disease which is essentially metabolic in origin and is much more than a mere facet of the process of vascular aging. In predisposed individuals atheroma may be marked in the first several decades of life and in older persons there is much variation in the age at which these changes become evident and in the degree to which they may develop. The factors underlying this intimal disease are still poorly understood, but we do know that, once this process is initiated, its development will be accelerated by extra vascular strain. Arterial hypertension definitely constitutes such an extra strain factor and one which, when well established, is not amenable to modification of those factors in the environment leading to increased stress. William Dock has clearly shown that the coronaries are unique amongst the arteries of the body in the thickness of their intimal lining. The only artery of similar size whose intima approaches that of the coronary in thickness is the occipital artery which is, like the coronaries, imbedded in muscles which are fairly constantly at work. Interestingly, the average female coronary has a much thinner intima and is much less subject to atheroma than that of the average male. There are some variations in this sex distribution and certain races, as the Chinese, have on the whole coronaries with quite thin intimas. This explains, at least in part, their comparative immunity to this affliction, although dietary factors may also prove of importance.

Given coronary atheroma, what clinical pictures may develop? The anginal syndrome is by no means an inevitable sequel. Nor may there be frank attacks of coronary thrombosis at any time in the course. Instead, coronary disease may progress insidiously and not infrequently first makes itself known by the induction of congestive heart failure, or by the production of various arrhythmias—such as auricular fibrillation or heart block.

How are we to recognize the presence of important degrees of coronary disease? Sooner or later, the electrocardiogram will develop changes which are more or less pathognomonic, in most cases. But at first, and sometimes for several years, we must rely on our clinical acumen alone. It is still not sufficiently appreciated that patients with angina pectoris may have this syndrome in overt form for one or several years and still have a perfectly normal heart on physical examination and even on electrocardiogram.

The patient with the early anginal syndrome never comes complaining of pain in or near the heart. There are lots of people with such complaint, but they seldom if ever have heart disease. Most commonly, they are suffering from occupational trauma to chest or arm muscles, or have pain due to pressure on nerve roots in the intervertebral foramina, usually secondary to degenerative changes in the intervertebral discs, a condition wrongly called "spinal arthritis." Sometimes, of course, they are suffering from an anxiety state and their pain is part of the syndrome of "heart consciousness." These people invariably locate their pain in or near the left breast, there is associated precordial tenderness, the pain is described as a sharp stab, or as a continuing dull ache, and there is often associated awareness of the heart's action or of the act of breathing, so that they complain of not getting enough air in their chests, and take frequent deep sighs. As one patient put it, they have "shortness of the deep breath." These people require, of course, adequate explanation and reassurance.

The true anginal subject comes complaining, if he does complain, of "indigestion," of vague lower substernal discomfort, or fullness, frequently noted on exertion taken after a heavy meal, and relieved

promptly by rest and by belching. This symptom is almost specific in its characters plus its associations—onsetting as it does with exertion and being relieved promptly by rest or by nitroglycerine. When it appears rather suddenly for the first time in a middle-aged individual who has previously been perfectly well, it always indicates, I feel, an actual coronary thrombosis, without, to be sure, any infarction. Its early recognition should be sufficient justification for the institution of a complete rest period of four weeks' duration followed by an equal period of convalescence. If this syndrome is treated thus radically at its onset, the picture may well clear up entirely, and there may be an avoidance of cardiac infarction which, if it does develop, will not only demand a longer period of immediate disability but will often leave its victim permanently more or less incapacitated. It is a matter of great importance that coronary disease be recognized as a chronic condition, subject to acute exacerbations. If these acute exacerbations are recognized promptly and are adequately treated by an appropriate period of complete rest—which should always be of some weeks' duration—the residual cardiac function may continue to be remarkably satisfactory for a considerable number of years. This is never true when the early symptoms are disregarded and when the acute episodes are inadequately handled. All too often, these people, who have been casually handled and allowed up as soon as acute symptoms subside, do avoid further overt coronary attacks, only to succumb to congestive failure within a year or two. Granted that convalescence is adequate, I feel the individual's response to exertion is an adequate guide to what he may be permitted to do. Sometimes the work possible may be surprising. I have in mind one diabetic individual now in his early sixties who, while convalescing from acute cholecystitis some 10 years ago, sustained a very severe anterior cardiac infarct. He was laid up more than three months and at the end of this time, the question of his return to work as a stationary engineer was reviewed. It was decided that while this work was heavy, he was accustomed to it and, as he pointed out, it was either that or going on relief, as he was too old for retraining or for seeking a change of occupation. This man has modified his work, has studiously avoided the production of symptoms, and has had no trouble since. I think that this principle of accustomed work is important. Often an apparently lighter job will prove to be much harder for the cardiac patient returning to work after a long lay-off, just because it is new and entails unaccustomed activities. Work to which an individual is habituated is performed with an expenditure of much less physical as well as mental effort. Like our obstetrical colleagues, I think we might well give most of our convalescent coronaries a "trial of labour." Physical effort which is well tolerated at the time, and which does not cause undue fatigue at the end of the working day, will almost certainly not predispose to fresh trouble.

Valvular heart disease must not be overlooked in this discussion. All cardiac murmurs are of course not indicative of lesions of the heart valves. Many systolic murmurs of low intensity, either by their location in the pulmonary area or by their variability with change of position or respiratory phase, are clearly labelled as physiologic. Systolic murmurs of greater intensity and constancy, especially those best heard in the aortic area or at the apex, are certainly pathologic, as are all diastolic murmurs however hard they are to elicit. They may still not be due to primary valvular disease, but they are, of course, none the less important if they indicate, as they may well do, dilatation of one of the heart chambers. When it is evident that a clean-cut valvular lesion, such as aortic stenosis, or incompetence or mitral stenosis, is present, it is still quite likely that the patient may be conscious of no functional limitations, that is, he is *functionally* CLASS I, and may remain so for years to come. In such cases of obvious rheumatic heart disease, even with the grossest murmurs, if there are no functional limitations, there is no indication for more than the mildest restriction of activity. Certainly, over-strenuous exertions and competitive sports should be prohibited, that is, these patients belong in Therapeutic *Class B*. Admittedly their life expectancy is much poorer than if they did not have their heart disease, but it will not be improved by over-restriction of their activities. Only as their hearts age will their functional and therapeutic status decline and gross limitations become necessary. The biggest danger in all such cases is the development of subacute bacterial endocarditis. These persons should be warned against the indiscriminate removal of foci of infection, especially bad teeth, without prophylactic chemotherapy. Acute respiratory infections in this group, too, require more than ordinary care—as in all persons with damaged heart muscle—because of the exceptionally deleterious effect they so often have on myocardial function, in the absence of imposed rest.

Time does not permit discussion of the cardiac arrhythmias. Most disorders of heart rhythm may be assumed to be benign unless they are accompanied by other overt evidence of heart disease. This is only uncommonly true of auricular fibrillation and auricular flutter. These *may* develop in persons with quite normal hearts and without adequate extracardiac pathology, but all too often their appearance may be a first evidence of early coronary disease. Equally, they might well indicate a previously unsuspected toxic goitre. A good many acute arrhythmias arising in persons without previous knowledge of heart disease and whose hearts are still otherwise normal on physical examination, respond exceptionally well to quinidine. Their development in persons who already have an important degree of cardiac pathology is always a serious matter, presaging as it does deteriorating myocardial function. While it may still be possible to maintain many such persons in a state of myocardial compensation by the prescription of digitalis, it is usually also necessary to impose such a degree of rest that economic usefulness is at an end.

This brief presentation might be concluded by again stressing the fact that individuals with quite important and obvious heart disease are just as efficient, within their limits, as those with completely normal hearts. Moreover, the limitations which should be imposed may be so slight as to render them employable anywhere but in the most strainful and arduous occupations. The cardiac patient's own knowledge of his functional limitations is usually a reliable therapeutic guide as to how much he may safely be permitted to do. This rule definitely applies to individuals with valvular heart disease and to those with hypertension. It may even be applied safely to those with the anginal syndrome or who have adequately recovered from one or more attacks of coronary thrombosis and have been properly convalesced therefrom. It is probable that, in the past, much unnecessary cardiac invalidism has been caused by undue solicitude and anxiety concerning heart disease. With proper handling, the average cardiac patient may continue for years after his disease first develops, as a valuable economic asset.

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Donald Blair Lowe

—A Tribute—

IN THE recent passing of DR. DONALD B. LOWE, Medical Director of the B. F. Goodrich Company, of Akron, Ohio, the profession lost a pioneer in industrial medicine and a real humanitarian. He was a modest and kindly man, a friend to mankind, and respected for his deeds by both the management and employees whom he so efficiently served. I now wish to relate an unforgettable incident which occurred while visiting this plant over 25 years ago, and which interested me profoundly. I remember vividly, as I entered the company property, seeing in an open space an old horse hitched to a dilapidated wagon in which were seated a poorly dressed man, a woman, and two children. Later, as I was returning from being shown about the plant taking notes on the welfare work, etc., I observed sitting at a table in the cafeteria these same people eating lunch. Afterwards, in DR. LOWE'S office, he spoke to one of the vice-presidents of the company, a man whom he wanted me to meet, a most charming man with a big heart, who was absorbingly interested in the social welfare of the company employees. It was then that I learned the story of the man who, with his family, came in the dilapidated wagon, to seek employment and who were dining at the cafeteria. DR. LOWE related to me how much it affected him to reject this unfortunate man, as he had just found on examination that he was suffering from tuberculosis. Upon consulting with the vice-president, it was decided by these two humanitarians that, since the man had applied in good faith for employment, they would not consign him to a county institution, but would treat him as an employee and have him sent to a sanitarium in Arizona where others of their employees were being treated. Accordingly, he was so sent. To this unsung factory physician and to all others of like humanitarianism our undying gratitude and affection is due. May his life inspire others so to do justly, to love mercy, and to walk humbly with their God.

—ROBERT T. LEGGE, M.D.

Nutrition and Industry

THE matter of nutrition is of major importance to industry, since it is a principal factor in the maintenance of health of the industrial worker, exerting a direct influence upon accident rates, on his acuity, productivity, and efficiency.

The war years afforded an unusual opportunity for the study of the relationship between nutritional status and work efficacy. Careful observation and valid conclusions were possible because large numbers of individuals—men and women—were subjected to similar working conditions and living habits, and the quantity and quality of their work were subject to rigid scrutiny. It is not surprising therefore that many studies were conducted on the relation between the worker's nutritional status and his work capacity, acuity, fatigue, and the incidence and frequency of accidents over the day.

Emphatically demonstrated was the important relation between the worker's nutritional status and work efficiency. Specifically, caloric intake and work output are intimately linked. Hence it is wisdom on the part of management to make every effort to improve the worker's nutritional status in the aim toward attaining better nutritional health and improved efficiency.

Many surveys have disclosed that a significant percentage of workers subsist on diets which fail to measure up to the standards established by the table of "Recommended Dietary Allowances," of the National Research Council.

If we disregard the present difficulties concerning food availability (a situation which we trust will be only temporary) two factors appear to be principally responsible for nutritional failure: (1) improper food selection, so that the day's meals do not supply the sum total of nutrients required for nutritional health; (2) inadequacy in number and size of the meals eaten. The latter failure is no less important—although it may defy accurate evaluation in terms of calories and amounts of nutrients. But its influence on work performance and industrial accidents appears direct and unmistakable.

Many studies have focused attention on the general lack of ability of the worker to make the right selection of foods, even when such foods are conveniently available. That this inability is nationwide was evidenced by similar reports on poor lunch selection in 33 manufacturing plants, in New York State, in plants in Illinois, and in plants in California.

In additon to poor selection of foods, another failure figures prominently in many reports on the nutritional health of industrial workers: Inadequacy of breakfast. Of special interest is evidence highly suggestive of a positive relation between industrial accidents and skipping or skimping of breakfast. The U. S. Bureau of Human Nutrition, in a leaflet "Eat a Good Breakfast" (U. S. Dept. of Agriculture, 1944) states specifically: "It's been found that workers who skip breakfast get less done in the first working hour than those who tuck away a good meal before work. And as the

morning goes on, the hungry ones grow less efficient."

The ill effects upon the industrial worker are thus twofold. An inadequate breakfast tends not only to interfere with satisfying the daily requirements of adequate nutrition, but also reduces morning productivity. Once the stage is set for the day by a poor breakfast, the entire meal plan tends to lose its equilibrium. Hence the significance of an adequate breakfast.

Health and nutrition authorities therefore have made specific suggestions for the correction of this too common practice. They have agreed that breakfast should provide approximately one-fourth to one-third of the daily caloric and nutrient requirements. A simple basic breakfast pattern has been suggested to assure a specific intake of nutrients and calories. This basic breakfast pattern presents fruit, cereal, milk, bread and butter or fortified margarine, and a beverage; this meal is easily augmented by the addition of meat, eggs, and other suitable foods, when more is needed.

Hence it appears worthwhile for the industrial physician to re-educate workers to better eating habits which begin with an adequate breakfast. Immediate benefits to be gained from such a program are a better start in the morning, better work performance, higher acuity, better general health, and fewer accidents.

DR. PILGRIM

TO THE monthly dinner meeting of the Chicago Section of the AMERICAN INDUSTRIAL HYGIENE ASSOCIATION, to discuss CLARK BRIDGES' excellent presentation on "Job Placement," which was based on his recent book "Job Placement of the Physically Handicapped," this being well supplemented by an interesting sound-slide film. . . . THEN on survey material in the grouping of data and the assessment of factual matter, whereof it was evident again that the collection of the same is a far easier task than its development and interpretation. . . . AND conferring with a recent associate, a doctor of dental surgery, and his son, the latter—on the eve of graduating from high school and preparing for college courses—being anxious to discuss preparations for entering the study of medicine, and it appearing to PILGRIM that one does not give advice in such cases but only discusses possibilities. . . . AND in the laboratory for an extended time on sundry matters, and dictating reports and examining manuscripts and editorial material, the latter anent the launching of a new scientific magazine, and the organizing of survey material, and voluminous correspondence. . . . THEN to a large industrial plant for the making of periodic examinations of employees exposed to dust; and concerned with inspections of certain departments and a conference on reports and records; and thence in a similar capacity to another plant for the periodic examination of men exposed to lead. . . . AND again at the desk, on the details of an alleged case of poisoning from exposure to munitions, with the development of various phases of the case, including industrial hygiene, industrial medicine, and medicolegal aspects. . . . WHENCE to the residence of DR. MARK SCHAPIRO for a fine evening of exchanging of experiences, food and drink, and much talk with the doctors present anent modern medicine and its present trends. . . . AND in conferences: with WARREN COOK on a new speakers' list for the National Association of Manufacturers, and, by telephone, with DR. HEDWIG KUHN anent certain publications and the printing of articles about the effects of radiation in industrial employees, and with attorneys and industrialists on a problem of stack gases and their possible effects on surrounding vegetation and dwellings, as well as the health problems concerned . . . . AND driving northwest to visit a plant for inspection on the problem of stack gases mentioned, where there were several important aspects for consideration, technical, legal, and of public interest. . . . AND then for several days in conferences and the giving of depositions, with attorneys from eastern Kentucky on a series of some 17 cases of alleged silicosis, in which it was apparent that claimants' attorney depended much upon literature published 12 to 15 years ago, which was brought to his attention repeatedly, though still it was difficult to make him understand that considerable progress had been made since that time. . . . AND again in a case before the industrial commission, both in advisory and other capacities, and having the experience that toward the end of the hearing, claimant's attorney called PILGRIM to the stand as his witness and sought to bring in evidence concerning a case heard six years before, for the purpose of the impeachment of testimony, it then having to be pointed out to him by respondent's attorneys that such evidence was not admissible in the then case, and moreover, that he could not be allowed to impeach his own witness, to which the arbitrator agreed as being good legal procedure. . . . AND concerned with the delightful task of reviewing material concerning the RAMAZZINI SOCIETY and its recent rendezvous at St. Clair, Michigan, including going over candid-camera shots of the various members as taken by DR. JAMES H. STERNER. . . . AND at luncheon with DRS. CARL PETERSON and THOMAS McKEOWN, the latter from Birmingham University, England, with some interesting and appealing discussion as to the principles involved in industrial medical pedagogy, it seeming evident that while any given medical student might not be prepared to go into industrial medicine as a special line of work, based upon the instruction given to him in his undergraduate courses, it nevertheless was important to give him general and basic information (as in other specialties) so that he might have at least an *understanding* (which it seemed was most important) of the workings of industrial medicine and practice, whence later, if desirable, he could add more to this general purview. . . . AND busy with preparing a dinner talk for the WESTERN ASSOCIATION OF INDUSTRIAL PHYSICIANS AND SURGEONS at San Francisco, June 30, and also the details of the Sectional meeting of the A.M.A. on Preventive and Industrial Medicine and Public Health, as well as other events scheduled and unscheduled on the California trip, as to which later. . . .

LETTERS

TO THE EDITOR:

IN DISCUSSING the costs of a comprehensive health program as conducted in seven small plants in New York City in a recent paper presented at the National Conference of Governmental Industrial Hygienists (see INDUSTRIAL MEDICINE, 15:6, 371-376, June, 1946), I mentioned two methods of computing such costs, namely; on a per capita and a per visit basis. Because of wide fluctuations in the total number of employees and a high turnover such as occurred in small plants during the war period, which might lead to difficulties in computation, the cost of the health program may also be computed on a percent of total annual payroll basis.

On such a basis, the cost of the health program in each plant which included the cost of the physician, nurse, medical supplies and construction and equipment (on a 10-year depreciation basis) was as follows:

Plant Number	Approximate Total Annual Payroll	Approximate Cost of the Health Program on a Percent of Annual Payroll Basis
1	$ 284,000	.7 of 1%
2	300,000	.7 of 1%
3	450,000	1.2%
4	726,000	.5 of 1%
5	845,000	.6 of 1%
6	850,000	.5 of 1%
7	1,680,000	.6 of 1%

This figure of .7 of 1% of the total annual plant payroll represents the approximate cost of a good health program in a small plant.

—NATHAN MILLMAN, M.D.

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COMMENT and OPINION

SAID Ben Franklin: "It is unreasonable what some assert, 'that printers ought not to print anything but what they approve'; since if all of that business should make such a resolution, and abide by it, an end would thereby be put to free writing, and the world would afterwards have nothing to read but what happened to be the opinions of printers."

MANY smaller firms, according to E. R. Granniss, of the National Conservation Bureau, are too preoccupied with labor problems and other problems of reconversion to spend much energy on safety. These small plants always have been the big headache in accident prevention. One recent survey showed they had 21.72 accidents per million man-hours, compared with 9.39 in large plants.

—*Camden, New Jersey, Post*, April 22, 1946.

A WATCHWORD among safety experts is: A careless person is just an accident going to happen. Another slogan which seems apropos and applies to the highway is: Slow down before you become a statistic."

—MR. HARRY L. SAIN at a meeting of the Executives Club of Chicago, May 3. *Executive Club News*, 23:33, 1, May 10, 1946.

THE *Corydon Republican* published the most concise criticism of the attempt to foist socialized medicine on an unsuspecting public we have yet seen; it is short and to the point: "Our understanding is that this socialized medical health insurance plan is designed to force the guy at the next desk or the next lathe, who has a sound appendix, to help you pay for your operation." There is a lot of red meat in those few words!

—*J. Indiana State M. A.*, March, 1946.

Management's Job

GOOD health service in industry now "is management's job and if management doesn't take the responsibility, somebody else will," DR. VICTOR G. HEISER, medical consultant, National Association of Manufacturers, told the Rocky Mountain Regional Industrial Health Conference, sponsored by the A.M.A. Council on Industrial Health, held at Denver, Colorado, on June 4, 1946, and attended by medical and business representatives from nine states in the area. Urging an end to the notion that the worker's health is strictly his own affair and that employers can let their employees look out for themselves, he declared that the industrial health service promises rich returns for management, employees and public alike. "Without high-volume production," he said, "we never will get out of the hole America is in now. But we never will obtain the production of which our economy is capable without giving more attention to the physical and mental fitness of employees."

—NAM Release, June 4, 1946.

THE manager of a Kroger store sent the kid to the back room to make a sign. When he brought it back the manager asked him, 'Frankie, did you read that sign?' The kid replied, 'No. What's the matter with it?' The manager said, 'Read it. What does it say?' The sign read: 'Ladies, please do not bring your fat cans in on Saturday.' "

—PRESIDENT HARRY L. STONE at a meet- of the Executives Club of Chicago, May 3. *Executive Club News*, 23:33, 1, May 10, 1946.

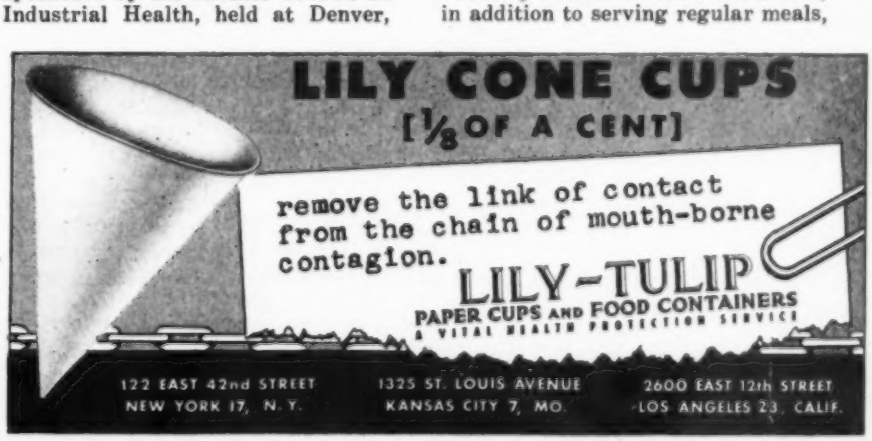
Photoengraving

THE principal skin irritants in lithographing and photo-engraving are the ammonium and potassium bichromates used to sensitize the metal plates. Hypersensitive workers may develop skin disorders also from solvents and cleaners such as benzine and turpentine, from silver salts, from iodides, bromides, cyanides, developers, intensifiers, glues, pastes and inks. Acid burns (chromic acid), however, are not as common as could be expected.

—From "Skin Hazards and Their Prevention in Lithographing and Photo-engraving," by TIBOR BENEDEK, M.D., in *N.Y.C. Lithographers Journal*, April, 1946.

Coffee on the Job

THE Pan-American Coffee Bureau has conducted a survey of coffee in relation to in-plant feeding programs by industry with highly satisfactory results. This revealed that, in addition to serving regular meals,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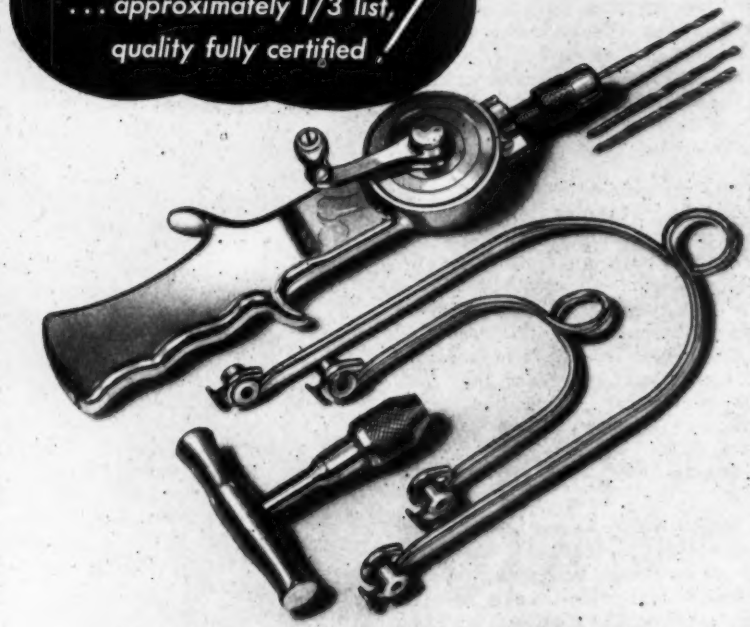

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many manufacturers provide coffee for workers on assembly lines, utilizing portable canteens. The canvass covered 173 industrial plants, located in 47 cities. Seven out of every 10 plants providing coffee-at-the-job service fully indorsed the program as an aid to production. Employees were 100% in favor of it. Management gave as reasons for adoption of in-plant feeding and coffee service its beneficial effect in speeding up production, reduction of labor turnover and accidents, decreasing absenteeism and improvement of employee health and morale.

—*New York Sun*, May 21, 1946.

Industrial Hygiene

THE senate Committee on Education and Labor has favorably reported S. 1271 in an amended form, proposing to enact an "Industrial Safety Act." As originally introduced, this bill seemed to provide for a reassignment of industrial health and sanitation programs from health departments to state labor departments. As amended, according to the report of the committee, the bill "eliminates any possibility of such a situation occurring." The committee recognizes, however, that if any state wishes to include in the program authorized by the bill features of an industrial health program it is free to do so under the language of the amended bill.

—*J.A.M.A.*, May 18, 1946.

Solvent Dermatitis

IMPROPER use of industrial solvents is the third largest cause of occupational dermatitis, accounting for 7.8% of all such cases. Since each year 1,000 of every 100,000 workers are afflicted with some form of dermatitis, 78 of every 100,000 workers therefore suffer from solvent dermatitis yearly. It may be estimated further that each year 1,560 cases of solvent dermatitis of sufficient severity to be compensable occur, with a financial loss, including wage loss and the cost of medical care, of about $312,000.00.

—Safety Research Institute.

Silica Dust Counting

SILICA particles so fine that more than 100 million can be piled on the head of a pin can now be sorted out of larger dust in factory air to control silicosis hazards more accurately, FRANCIS R. HOLDEN, of Industrial Hygiene Foundation, reported April 11. DR. HOLDEN described this new method developed by the Foundation at Mellon Institute, Pittsburgh, at the seventh annual meeting of the AMERICAN INDUSTRIAL HYGIENE ASSOCIATION in session at the Sherman Hotel, Chicago. He said the procedure marks a further step in protecting the health of workers in dusty trades. The finer the silica dust, DR. HOLDEN continued, the greater the danger because only microscopic particles smaller than 5 microns are likely to damage the deep lungs. Particles larger than 5 microns, which is about the size of a red blood cell, are more readily trapped in the filter mechanism of the nose and throat. Dr. Holden described the collecting, counting and analysis of dust in the dangerous size ranges. "Visible and invisible dust in the workplace is determined by condensing dust floating in atmosphere equivalent in size to a small room, into a capsule-sized sample. This is done by drawing a measured volume of air through a salicylic acid. The acid is then dissolved in alcohol and the dust sample remains." Through a process of sedimentation the total dust sample is divided into particle sizes above and below 5 microns. After the smaller particles have been counted and analyzed by x-ray, the chemist can now determine the degree of a silica hazard with greater accuracy than formerly.

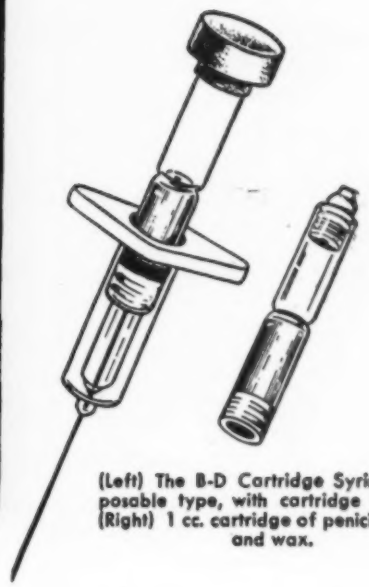
—*Iron Age*, April 25, 1946.

P. & R. Dust Control

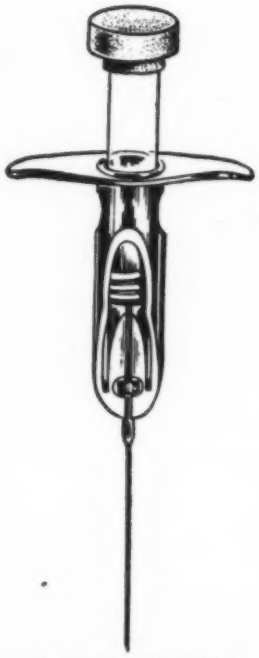
A PAPER on dust control, read by L. D. Lamont, of the Philadelphia & Reading Coal and Iron Company, at a safety meeting held by that company for its staff surgeons and consultants, as well as safety department employees and officers of the concern, revealed this company has made great strides in controlling dust in its mines and operations. In May, 1944, the company in conjunction with L. H. Johnson, an engineer of the U. S. Bureau of Mines, inaugurated a vast program of survey and research on controlling dust, as a result of which the company has

Announcing

Easier Administration of Penicillin in Oil and Wax



(Left) The B-D Cartridge Syringe, disposable type, with cartridge inserted. (Right) 1 cc. cartridge of penicillin in oil and wax.



The B-D Metal Cartridge Syringe with cartridge inserted.

Bristol Laboratories now introduce two techniques which are designed to make the administration of penicillin easier and more practical. Both of them make use of a 1 cc. glass cartridge of Penicillin in Oil and Wax. A completely new feature of the Bristol Cartridge is a specially designed rubber stopper which permits an aspirating test to prevent venoclysis.

Bristol Cartridges may be used anywhere, any time with the B-D Cartridge Syringe, Disposable Type. (Above) For office or hospital, many physicians will prefer the B-D Metal Cartridge Syringe. (Left)

In addition to the 1 cc. cartridges, Bristol Penicillin in Oil and Wax is still available in 10 cc. rubber-stoppered vials, for those who prefer to employ a Luer-lock syringe. All forms are available through your regular source of supply.

BRISTOL PENICILLIN IN OIL AND WAX

(Romansky Formula)

BRISTOL
LABORATORIES
INCORPORATED

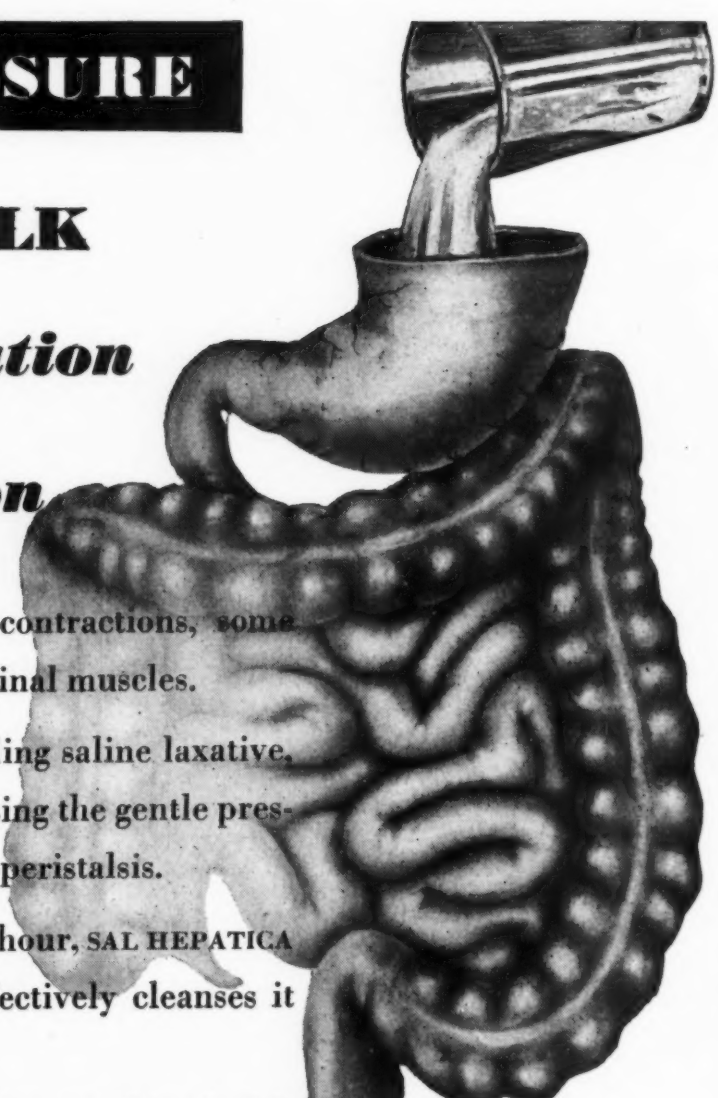
SYRACUSE 1, NEW YORK

GENTLE PRESSURE

of LIQUID BULK

relieves constipation

without irritation



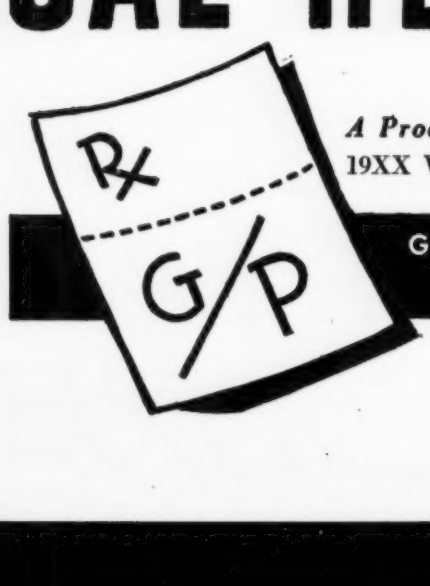
In order to reinforce peristaltic contractions, some laxatives act by irritating the intestinal muscles.

In contrast, SAL HEPATICA, a sparkling saline laxative, follows nature's own methods by using the gentle pressure of "liquid bulk" to stimulate peristalsis.

Acting promptly, usually within an hour, SAL HEPATICA flushes the intestinal tract and effectively cleanses it of waste.

Because of this quick yet gentle action, combined with its pleasant taste, SAL HEPATICA continues to gain the ever-increasing confidence of your profession.

SAL HEPATICA



A Product of BRISTOL-MYERS COMPANY
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GENTLE PRESSURE FOR GENTLE
YET THOROUGH LAXATION

made considerable progress in eliminating the dust hazard in its mines. Mr. Lamont said that at P & R mines all tunnel work is drilled wet, as are many rock holes. The muck piles in tunnels and rock work are sprayed before mucking. He said it was surprising to learn that, generally speaking, hand-loaded coal produced higher dust counts than that from running chutes, shakers and conveyors. The company, he said, was pursuing a progressive policy on controlling dust. Inability to get certain materials because of the war has not permitted the company to make as much progress as it would like, but it is hoped that they would soon be able to get the necessary equipment to permit them to go forward with their plans.

—*Frackville, Pennsylvania, Ledger,* March 23, 1946.

Program for Disabled Veterans

FISHER Body Division, General Motors, Detroit, announces an experimental program for disabled war veterans, believed to be the first of its kind in a large industry. The purpose is to offer job opportunities to disabled servicemen equal to those sought by persons with full physical capacities. Limited in scope in its present experimental stage, it is entirely apart from General Motors over-all program for rehiring veterans who were employees before the war. This project for disabled men was launched in February. After three months of operation it has proved conclusively that disabled men are setting records in the automobile body building industry as courageously as they served on the fields of battle. Their record, in fact, has been so outstanding that new departments are being surveyed for possible inclusion. Disabled men were hired at the start to work in Fisher Body's Engineering Division Reproduction Department. Some of them were arm and leg amputees; others had less obvious disabilities such as permanent leg injuries, or POW's who had suffered frozen feet. All were assigned to jobs which formerly were given to young men desiring to break into automotive body engineering. Fisher officials were amazed at the rapidity with which these men learned all phases of reproduction work, such as operation of mimeograph and offset printing machines, and working as trimmers, cutters, sorters, etc. Forty-five men are now employed on such jobs and, as their efficiency and experience increases they will, when openings occur, be transferred into related clerical jobs in the Engineering Specifications and Engineering Release Writing Departments, from where they may branch out into the field of automotive body engineering. Officials at first believed it impractical for an amputee to attempt to operate a duplicating machine, but the amputees quickly proved that they could operate one very easily.

Rx DESITIN OINTMENT

The External Cod-Liver Oil Therapy

USED EFFECTIVELY IN THE TREATMENT OF

Wounds, Burns, Ulcers, especially of the Leg, Intertrigo, Eczema, Tropical Ulcer, also in the Care of Infants

Desitin Ointment contains Cod-Liver Oil, Zinc Oxide, Petrolatum, Lanum and Talcum. The Cod-Liver Oil, subjected to a special treatment which produces *stabilization* of the Vitamins A and D and of the unsaturated fatty acids, forms the active constituent of the Desitin Preparations. The first among cod-liver oil products to possess unlimited keeping qualities, Desitin, in its various combinations, has rapidly gained prominence in all parts of the globe.

Desitin Ointment is absolutely non-irritant; it acts as an antiphlogistic, allays pain and itching; it stimulates granulation, favors epithelialisation and smooth cicatrisation. Under a Desitin dressing, necrotic tissue is quickly cast off; the dressing does not adhere to the wound and may therefore be changed without causing pain and without interfering with granulations already formed; it is not liquefied by the heat of the body nor in any way decomposed by wound secretions, urine, exudation or excrements.

DESITIN POWDER

Indications: Minor Burns, Exanthema, Dermatitis, Care of Infants, Care of the Feet, Massage and Sport purposes.

Desitin Powder is saturated with cod-liver oil and does not therefore deprive the skin of its natural fat as dusting powders commonly do. Desitin Powder contains Cod-Liver Oil, (with the maximum amounts of Vitamins and unsaturated fatty acids) Zinc Oxide and Talcum.

Professional literature and samples for Physicians' trial will be gladly sent upon request.

Sole Manufacturer and Distributor in U. S. A.

DESITIN CHEMICAL COMPANY

70 SHIP STREET PROVIDENCE, RHODE ISLAND

Fisher Body obtains all disabled veterans through the Veterans' Employment Center of the U. S. Employment Service in Detroit. Branch offices of the USES send prospects into the Center where they are interviewed. If the prospect seems to possess the proper qualifications he is sent to Fisher Body's Central Engineering Employment Office where another interview takes place.

Why Industrial Health

FOR the happiness of the worker—for the success of the plant—good health is a must. It is a key to production, since people—healthy people, working at jobs they are physically able to do—are a company's biggest asset. Why a plant health program? First and foremost, it saves the health of the worker—which if lost in industry, can never be paid for by any wage raise, compensation check or pat on the back; and second, it is just "good business"—it helps raise production and lower costs. What is an industrial health program? It has two phases, each specific, each vital. One promotes the health of the worker by means of a plant medical service that is professionally staffed, and number of people active in health and safety matters. The committee fair and unprejudiced in its practices. The other develops proper lighting, ventilation, noise control, safe handling of harmful materials, and other improvements, in the plant itself. It deals with sanitation and engineering. How can the program be put across? The two-fold program can be personalized for each worker in the shop by a health and safety committee, composed not of supervisors alone, but also of regular employees of below foreman rank. Rotating membership will strengthen this committee by getting a large

spots and reports unsafe and unhealthful conditions. It can vitalize the whole program—for it is the man on the job who is usually the first person to feel the effects of its dangers. Industrial health activities must be adapted to the individual plant—they must be "tailor made." But most factories aren't in the health business, and so they use assistance from specialized agencies, some of which are: health and labor departments, manufacturers' associations, labor organizations, safety councils, insurance companies.

—From "Industrial Health—Key to Production," Bureau of Industrial Health, State of New Jersey Department of Health.

Lewis' Reasons

THE reasons advanced by Mr. Lewis for the establishment of a union-controlled "health and welfare" fund, financed by contribution from the operators equal to 7%, are: (1) "To furnish adequate and modern medical service to coal miners and their dependent families with a choice of physicians, which in many areas, particularly in the South, they do not now have. We plan to replace the present company doctor scourge. (2) To provide adequate hospitalization under proper standards. (3) To provide insurance, life insurance and health insurance for the miners, which they can not now purchase. Life insurance now costs the mine worker about 277% of what it costs people in sedentary occupations. . . . (4) The fourth reason is rehabilitation. Men who are injured and disabled in the mines through the loss of limbs, blindness or other major physical injuries, need rehabilitation. There are no facilities available to the mine workers now and there are probably living 50,000 men who have been incapacitated from further mining through injuries who have received no assistance in rehabilitation or training for other vocational employment. (5) The fifth reason is economic aid in distress or hardship cases. Families that become impoverished because they have not received compensation provided by the states owing to the manipulation of the company doctor system and by reason of testimony of the company doctor, which is the only medical testimony available because no other doctor is permitted to attend the victim. The mine worker cannot secure other medical testimony to refute the claims of the company doctor. In consequence, his award for total disability may be cut to as low as 30% and his family becomes impoverished. There are thousands of such cases."

—Press Item.

Acetone and Butanone

THE New York State Department of Labor, in the September, 1945, issue of their *News Magazine*, cite a case where acetone and butanone, used as solvents for resins, applied with a brush to waterproof the seams of Army raincoats, produced toxic effects on several employees of a raincoat manufacturing plant. The brushers complained of illness and watering of the eyes, fainting spells followed by convulsions, headaches, and unconsciousness. The high concentrations of vapors were due to machine leaks, uncovered solvent containers, and overhead drying racks for the raincoats. As acetone and butanone are not only toxic but highly inflammable, a workroom crowded with machines, solvent containers, and racks of coats giving off fumes also present a dangerous fire hazard.

—From *What's New in Industrial Hygiene*, January to March, 1946.

The Panel in England

THE JANUARY 26 issue of the *American Medical Association Journal* carries an article by Capt. Paul K. Maloney, M.C., A.U.S., on the panel system and how it works in England. (The Status of the English Doctor, *J.A.M.A.*, 130:226, January 26, 1946.) We strongly urge you to read this article. The use of controls is axiomatic in the true scientific approach to any experiment. Fortunately for the unprejudiced observer, fairly adequate controls are usually available even though they be quite unintentional, and the program of National Health

PEDICULOSIS

must be relieved *Quickly* among

INDUSTRIAL WORKERS

Early discovery, and immediate and effective control, are important in the treatment of Pediculosis among industrial workers. Unless proper steps are taken, a single case of Pediculosis may lead to infestation of other employees.

Cuprex is a valuable aid to the industrial physician who bears the responsibility of having to discover and check any condition which may impair the efficiency of the workers under his care.

Cuprex therapy is simple. One treatment—of from 15 to 30 minutes—destroys the nits as well as the lice. Cuprex requires no messy or repeated applications, and the patient may return to his job without delay, and without embarrassment.

Literature on request

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CUPREX

The Personal Insecticide

Available in 2 oz. and 4 oz. bottles

hot weather therapy in PSORIASIS

Psoriasis is a puzzling disease. Among its mysterious features is the fact that 25% of psoriasis sufferers fail to improve when summer comes, while 14% actually become worse.

It is no puzzle however, that RIASOL is as effective in summer as it is in winter.

RIASOL contains 0.45% mercury chemically combined with soaps, 0.5% phenol and 0.75% cresol in a washable, non-staining, odorless vehicle.

Apply RIASOL daily after a mild soap bath and thorough drying. A thin, invisible, economical film suffices. No bandages needed. After one week, adjust to the patient's progress. RIASOL may be applied to any area, including face and scalp.

RIASOL is not publicly advertised. Supplied in 4 and 8 fld. oz. bottles, at pharmacies or direct.

Before Use of Riasol Treatment

After Use of Riasol Treatment

MAIL THIS COUPON TODAY AND TRY RIASOL ON YOUR NEXT PSORIATIC CASE

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8751 Grand River Ave., Detroit 4, Mich.

Please send me professional literature and generous clinical package of RIASOL.

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RIASOL *for* PSORIASIS

Insurance in England is no exception. Not only can a comparison be made with our own system to date, but in England itself there is a privately organized plan supervised by the doctors themselves. We will quote briefly some statistics from each in the hope that you will be induced to study this article in detail. The distribution of "profits" (quotations ours) under the privately organized plan is as follows:

For the accountant.... 7.5%
For the collectors.....12.5%
For the doctors.....80.0%

In the government-controlled plan, the fund goes thus:

For the doctors.....12.5%
For drugs 3.5%
For mileage fees..... 0.5%
And for administrative overhead—hold your hats —the figure is.....84.0%

Yet the system of socialized medicine in England is pointed out as an example of successful operation. We have touched only on the financial aspects; the professional disadvantages must be read in detail to be appreciated. Don't fail to examine this report. And don't skim through.

—From *Fulton County Medical Society Bulletin*, March 7, 1946.

Aluminum Therapy in Silicosis

THE SEPTEMBER, 1945, issue of the *West Virginia Medical Journal* aptly summarizes the present opinion regarding aluminum therapy in the treatment of silicosis. Dr. D. A. MacGregor writes that it is claimed that the early relief of symptoms is due to the ability of aluminum to prevent the formation of silicic acid. From the standpoint of the employer, it is very desirable not to recommend treatment to an employee who has tuberculosis. It is difficult to evaluate the amount of improvement to be derived from this therapy since so many of the factors are subjective. It is easy for a patient to exaggerate the degree of his disability when he suspects that he has silicosis and he can likewise exaggerate the degree of improvement after treatment. The fibrosed tissue or nodules are not altered by the treatment. Only the immature lesions lend themselves to treatment for the fibrosis and nodulation are the end result of an irreversible pathological process. Subjective symptoms must be accepted when a patient's cough is diminished, when he can return to work and produce more without undue shortness of breath, and when he says he has less tightness in the chest and feels better. This therapy should not be installed without prior engineering measures to reduce atmospheric dust concentrations.

—From *What's New in Industrial Hygiene*, January to March, 1946.

Multiplicity of Agencies

THE administrative organization of foreign programs of medical care is distinguished by a well known feature: multiplicity of agencies. A few significant trends may be discussed briefly. Usually, the national governments have accepted responsibility for nationwide policy-making and, to varying extents, for supervision of standards and financial participation. They share responsibility with governments at other levels. Small administrative units have been more and more discarded, since they have proved inadequate for the purpose of financing and administering medical-care programs. Instead, large units, such as counties, districts and regions, are vested with financial and administrative powers and functions. Administration of compulsory sickness-insurance schemes is generally separated from the administration of all other health services and entrusted to special statutory bodies. Thus, a state within the state has been created. The result has been overlapping, friction and waste of administrative effort on the one hand and neglect of some fields of health service on the other.

—From "Foreign Programs of Medical Care and Their Lessons," by FRANZ GOLDMANN, M.D., in *New England J. Med.*, January 31, 1946.

75% completely relieved!

Goldzieher and Popkin (J.A.M.A., 131:103, 1946) recently treated 100 consecutive cases of headache (56 idiopathic, 13 spinal tap, 9 typical migraine, 6 hypertensives, 4 sinus, etc.) with Naotin* at a large city hospital. They found that "75 were completely relieved." Referring to migraine, they state: "The rarity of side reactions is of interest in comparison to the customary use of ergotamine tartrate . . . " Why not use Naotin in the next series of headaches or migraine that you encounter?

*Brand of sodium nicotinate solution

Pertinent literature on Naotin sent on request

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Pre-employment Examinations

MICHIGAN has amended its statute to provide that all employers subject to the provisions of the compensation act "shall furnish to their employees without charge a complete physical examination at regular intervals, but not more than one examination in each period of six months, and shall furnish to the employee a true copy of the medical report when the presence of silicosis, pneumoconiosis or other dust disease is found." This act became effective on May 28, 1945; therefore, the initial physical examination of all employees was to be completed by November 28, 1945. Minnesota has amended its statute by requiring annual medical examination of employees exposed to the hazards of silicosis and asbestosis, the cost of such examination to be divided equally between employer and employee. Reports of such examinations, together with x-ray films and other original exhibits are required to be filed in the office of the commission, making the reports a public record. Upon the termination of employment, the employer may request the employee to submit to a final medical examination, by giving 10 days notice in writing of the time and place where the examination is to be made. Any employee who refuses such examination, thereby waives any right to compensation for occupational disease that later develops.

—From *What's New in Industrial Hygiene*, January to March, 1946.

Industrial Dental Studies

DENTAL surveys conducted by the Division of Industrial Hygiene of Illinois industrial workers show the following results: 10% are not in need of dental treatment, 10% have edentulous mouths and 80% are in need of varying degrees of dental treatment. The entire group of industrial workers show about four decayed teeth per person, as an average, and about 20% with varying degrees of soft tissue infections and suppuration. It would be of considerable interest to determine if this 20%, with oral infection present, account for more than 20% of the plant accidents and illness. Several medical directors of large industries have noted that long bone fracture patients, with infected and badly neglected mouths, will average more days of hospitalization than will those fracture patients who are free of oral sepsis. . . . Industrial dentistry is a specialty of dentistry and should not be confused with the private practice of general dentistry. The industrial dentist should not be concerned with restorative dentistry but rather devote his time and efforts to the health aspect of the oral cavity. In short, a good industrial health program should provide emergency dental care; emergency treatment of industrial injuries and the oral occupational diseases. The program should also include the recognition, prevention and emergency treatment of dental sepsis, recognized as a major cause of non-occupational ailments and ill health among industrial workers, which results in time loss, absenteeism, fatigue, reduced efficiency, reduced physical fitness and mental alertness. The program should also provide for full and comprehensive dental health education. Industrial health groups are well aware of the important relationship of dental health to the general health and physical well being of the industrial worker. The industrial dentist may play an important part in elevating the industrial health level and thereby increase industrial efficiency, enhance industrial safety, and reduce man-hour and manpower losses in this critical post-war era of industrial economy.

—From *What's New in Industrial Hygiene*, January to March, 1946.

COMPRESSION BANDAGING...

with ACE BANDAGES

FOR BURNS AND WOUNDS

There has been a reawakening of interest in the use of Compression Bandaging for burns (and wounds). Particularly is this true of physicians recently returned from Service—where they saw the life-saving, pain relieving results obtained with this technique.

By use of compression bandaging, body fluid loss is diminished with consequent reduction in loss of protein. Tendency to shock is minimized, pain is largely relieved, and the percentage of subsequent infection is generally lower than with other methods.

Pressure is equalized by the following procedures:

1. Apply sterile lubricant generously to site of burn or wound, and beyond.
2. Cover with sterile gauze dressings beyond the affected area in all directions.
3. Add cushion of sterile absorbent cotton or mechanics waste, at least ½" thick, as evenly as possible.
4. Wrap an Ace Bandage over the entire dressing, considerably above and below the site of burn or wound, pulling the bandage snug. It is the even pressure exerted by the bandage over the cushion of cotton or waste that tends to reduce pain rapidly.

REFERENCES

War Dep't. Technical Bulletin—March, 1945 TB Med. 151

Sumner L. Koch, M.D. "The Use of Compression as a Surgical Principle in the Treatment of Injuries." Quarterly Bulletin—Northwestern U. Medical School — 1943, Winter Quarter.

Faxon—N. W. and Churchill, F. D. The Cocoanut Grove disaster in Boston. A preliminary account. J.A.M.A. 1942, 120: 1385

B-D PRODUCTS Made for the Profession

BECTON, DICKINSON & CO., RUTHERFORD, N. J.

Industry vs. VD

SPACE limitations make it impossible to describe the many peaks of interest confirming the heightened public concern with social hygiene problems in evidence throughout the country. However, one striking example of this national awareness must be put on the record. Last month an unsolicited request came to ASHA headquarters from the Seiberling Rubber Company of Akron, Ohio, for help in setting up a VD case-finding and education program. J. P. Seiberling, president, and Tom Buchanan, public relations man for this alert manufacturing firm with some 3,000 employees, were convinced that a VD program would protect the health of the workers and raise morale in the firm. The production supervisors did not share this enthusiasm. As a result of the visit by the ASHA industrial con-

sultant the prospects for carrying out the plan improved. Profiting by the VD-TB survey in Savannah, Georgia, and by the good reception given the program of integrated health education of the Brooklyn Industrial Health Committee in New York, suggestion was made to the Seiberling Company that they begin their health education activities by forming a labor-management health and safety committee. It was further suggested that working through this in-plant committee the first project might well be a combined VD-TB survey. The committee, well established by carrying out this first project, could then continue in a general health program suitable to the needs of the firm. Developments in Seiberling promise to establish a useful pattern applicable for programs in individual firms. Further reports on Akron can be expected in subsequent issues.

—PERCY SHOSTAC, in *J. Social Hyg.*, February, 1946.

Health Check-up

DOCTORS and visiting nurses are employed by a coal operating company in Stotesbury, West Virginia, to give periodic check-ups to the babies of its coal miners. Special instructions for each infant are features of this service, and hospitalization, surgery and medical care are supplied at $4.50 a month.

—*Elk City, Oklahoma News*, April 19, 1946.

Congress Will Cure It

IN THE February 8th issue of the Labor Temple News there was published an article under the title of Do We Need Health Insurance?, by Arthur J. Altmeyer, Chairman, Social Security Board, Washington, D. C. Arguing for compulsory health insurance Mr. Altmeyer states that "we have done much better in protecting people's health in some sections of the country than in others, for some types of diseases than for others." He goes on to say that "if the national death rate from tuberculosis had been as low as the lowest actually achieved in any State in 1943, some 42,000 lives would have been saved in that year." This argument implies that all we need to do for the lowering of the national death rate from tuberculosis is to have Congress pass the bill for compulsory health insurance and presto we will be saving the lives of 42,000 people, who annually die unnecessarily from the dread disease of tuberculosis. The country would be fortunate indeed, would the fight against tuberculosis be such a simple matter. How truthful, however, is the argumentation of Mr. Altmeyer? Statistics from which Mr. Altmeyer has taken his figures show that in 1943 the lowest death rate from tuberculosis in the country, 11.2 per 100,000 population, was observed in Utah. There were five additional states Wyoming, Nebraska, Iowa, Idaho and Kansas, in which the death rate from tuberculosis was below 20 per 100,000 population. The highest rate 98.2 was observed in Arizona, a resort state whereto the tuberculous still flock, and the next highest 66.9 in Tennessee.

—From "Do We Need Health Insurance?" in the *Peoria Fluoroscope*, 14:3, March, 1946.

When

INDUSTRIAL health in a town like Chattanooga "is pretty much the problem of community health," according to Dr. Joseph Johnson, Jr. Chattanooga, with more than 25,000 industrial workers, will take care of a large part of its health problem when industrial workers take care of themselves by keeping check on their health through regular examinations and, when needed, adequate treatment.

—*Chattanooga, Tennessee, News—Free Press*, April 25, 1946.

Illinois Central

A SPECIAL meeting of the Hospital Department Board was held, April 17, 1946, to consider requests from Hospital Department employees for an increase in their wages. The Board was in accord as to the need for reasonable increases to meet rising living costs and to avoid loss of trained personnel to other institutions paying higher salary rates. The final decision was to grant appropriate increases effective May 1, 1946. An exhaustive study by a special committee indicated clearly, however, that present income of the Hospital Department is not sufficient to absorb the additional outlay of money involved and some immediate action is necessary to preclude a serious deficit in financial operations which, otherwise, would be continuing. There were two alternatives to meet this situation—one to curtail the services of the Department, which all agreed should not be done—and the other to maintain and improve the present high standards by

AT HOME OR AWAY SPOT TESTS SIMPLIFY URINALYSIS

NO TEST TUBES • NO MEASURING • NO BOILING

Diabetics welcome "Spot Tests", (ready to use dry reagents), because of the ease and simplicity in using. No test tubes, no boiling, no measuring; just a little powder, a little urine—color reaction occurs at once if sugar or acetone is present.

Galatest Acetone Test (DENCO)

FOR DETECTION OF SUGAR IN THE URINE FOR DETECTION OF ACETONE IN THE URINE

SAME SIMPLE TECHNIQUE FOR BOTH

1. A LITTLE POWDER 2. A LITTLE URINE

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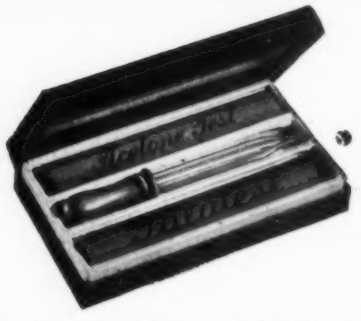
Write for descriptive literature



A carrying case containing one vial of Acetone Test (Denco) and one vial of Galatest is now available. This is very convenient for the medical bag or for the diabetic patient. The case also contains a medicine dropper and a Galatest color chart. This handy kit or refills of Acetone Test (Denco) and Galatest are obtainable at all prescription pharmacies and surgical supply houses.

Acetone Test (DENCO)... Galatest

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authorizing an increase of 50 cents in monthly contributions. The Board, we think wisely, adopted this latter course. There has been much discussion pro and con as to benefits to be obtained through hospitalization and medical plans other than our own. All of these plans have been carefully reviewed and the only conclusion that can be reached is that benefits under the Illinois Central Hospital Department plan are much greater and cost less than any other plan available. On other railroads Hospital Department contributions range from $1.00 to $3.50 per month but none of them includes benefits comparable to ours. The cost of industrial plans and surgical groups range from 50 cents to $3.00 per month with an average of approximately $2.00 per month. However, a fair comparison of the benefits cannot be made because these other organizations furnish a very limited service, ranging from no hospitalization benefits to 31 days in each year and some offer an additional number of days at a reduced rate. Generally, hospitalization plans do not provide professional services, while industrial plans and surgical groups furnish a limited amount of this service. In many instances the subscribers assume 50% of the cost of the surgical benefits. Often overlooked is the fact that the Illinois Central Hospital Department incurs a large expense for specialists in the various branches of the medical field, private rooms, special nursing services, physiotherapy, laboratory and x-ray examinations, anesthetics, oxygen therapy, and such special examinations as basal metabolisms, electrocardiograms, etc., which are provided as required. Yet these benefits either are not furnished by other plans or the provision for them is quite limited. The Illinois Central Hospital Department is, in fact, an employees' nonprofit organization. In governing its affairs the Board of Directors, Chief Surgeon, and Hospital Department staff have in mind only the obligation of the Department to furnish maximum benefits to all employees at the lowest cost consistent with high standards of service.

—C. F. DUGGAN, Chairman, Hospital Department, in *Illinois Central Magazine*, May, 1946.

Psychiatry in Industry

IT MAY well be that industry can teach us something about handling difficult psychiatric patients," DR. FREDERICK W. DERSHIMER, director of psychiatry for E. I. du Pont de Nemours and Company, told the American Psychiatric Association at Chicago, May 27. "Before we decide to screen them out we need to give serious consideration to the fact that the inventor of nylon was a known psychiatric case for years. Denying employment to him would have cost the du Pont Company more than the psychiatrist could hope to save in a lifetime." Dr. Dershimer explained that one of the ways in which industry offered an unusual opportunity for the psychiatrist was in letting him see and treat normal people at work; it has been found possible to treat many severe psychoneuroses and some psychoses without leave of absence, and that by doing so it has been learned that better and quicker results can be attained than when sick leave is granted. "A serious unsolved problem is the fixed habit of many uninformed practicing physicians and surgeons of advising all 'nervous' patients to take time off. . . .By doing this, they turn incipient psychoneurotics into chronic cases, which are then much more difficult to treat. Nothing short of general education of the medical profession in accurate diagnosis and proper treatment of psychoneurotics will correct this bad practice." Dr. Dershimer said that at the du Pont Company no attempt was made to lay out a psychiatric program in advance, in the belief that such a step would violate a basic rule of scientific medicine by prescribing treatment without first making a diagnosis. Accurate diagnosis is impossible without a knowledge of the anatomy, physiology and pathology of the patient. The psychiatrist, therefore, needed to learn everything possible about the organization and healthy functioning of the company before he could begin making accurate diagnoses of its psychiatric problems. Previous literature on psychiatry in industry, he contended, has underestimated the importance of this basic knowledge, and the result has been that it has offered remedies for non-existent ills, or for those that are unimportant or already fairly well controlled. It has completely missed important

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"The therapy of a majority of the cases of contact dermatitis encountered in industry", according to the noted dermatologist, Dr. Frank C. Combes[1], "requires no further medication than the intelligent use of a *good buffer solution such as Liquor Aluminum Acetate (Burow's solution)* . . . and a *good crude coal-tar paste.*"

His preference for wet dressings solution is **Domeboro Tabs** ("widely used in industry", particularly by Parkes[2] at Curtiss Wright for cutting-oil dermatitis)—because it is "a convenient tablet which, when dissolved in water, releases a *lead-free aluminum acetate in appropriate dilution,*" with a substantial percentage of boric acid.

The *crude coal-tar paste* used at New York University, according to Combes, "is manufactured commercially under the name **Daxalan**"—which has been found *superior to distillates, filtrates and pastes containing liquor picis carbonis.*

It must be properly applied for "optimum benefit", and Combes advises thinning with **Domolene** for spreading over a large area—because in his judgment its hydrophilic ointment base "does not materially lessen the therapeutic efficacy of the paste."

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(1) Combes, F. C.: Indus. Med., July, 1944.
(2) Parkes, Morey: Indus. Med., January, 1944.

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problems in which psychiatry might offer valuable aid if it would only learn what they are and accept them as problems for study. The psychiatrist cannot learn all about industry by visiting a plant or two and talking with a few members of management, since industries, like individuals, each have their own personalities based on company policies, the type of industry, and a host of other varying factors. Within a large industry, there are great variations even between different departments, and the emotional atmosphere varies in proportion to the hazards involved and the efficacy of the protective measures employed. In addition to these matters, the industrial psychiatrist should be well acquainted with the kind of medical service supplied by the company, Dr. Dershimer declared, citing his own experience working as a regular industrial physician before he took on full-time psychiatric work. He should be acquainted with the traits and habits of the American workman which cause or enhance some psychiatric problems, such as the "tall tales" of hazards told to newcomers by the older hands, which sometimes lead the latter to work in a state of chronic terror. Industry in general employs and uses individuals who fit into every known psychiatric category, while some individuals whom the average psychiatrist might think unemployable often prove to be valuable employees. Discussing the du Pont program, Dr. Dershimer said that one technical division invites the psychiatrist to sit on the meetings of its management and directors, others meet in regular seminars with him to discuss their own emotions and any problems of managing themselves or their personnel which may arise. This equivalent of group therapy applied to normal people in positions of considerable authority he described as genuine preventive psychiatry. Other activities include early treatment of incipient psychiatric problems, advice as to referral or hospitalization of more severe ones, talks to groups of supervisors and plant managers, papers and clinical instruction for plant physicians. "Industrial management is open-minded about the application of psychiatry in industry provided the psychiatrist is willing to learn enough about industry and its problems to make sense. In our own experience, we find top management increasingly asks for psychiatric help in its problems. With this example, in time, the mental hygiene of the entire organization may be expected to improve."

—Committee on Public Education, American Psychiatric Association, release.

Occupational Diseases

NEW occupational-disease laws were enacted in Colorado, Florida, Maine, and New Mexico, bringing to 32 the number of states providing compensation for industrial diseases. The Florida law covers all occupational diseases, but the other three laws are the schedule type and are restrictive in many respects. In addition to this new legislation, changes in existing laws were made in a number of states. The Colorado law establishes an elective system of compensation for disability or death caused by the listed poisonings and diseases. The law has a number of restrictive provisions. For example, disablement is defined as inability to perform any work for remuneration or profit, compensation is not payable for the first 30 days unless disability lasts 60 days or longer, and a written claim must be filed in triplicate within 60 days after disablement. There are also especially restrictive provisions regarding silicosis or other dust diseases. In Maine the workmen's compensation act was extended to cover a schedule of 13 occupational diseases, but limits compensation for occupational diseases to $500 during the first month the act is effective (January, 1945) with increases of $50 for each succeeding month until the limitations fixed for accidental injuries are reached. This method of limiting benefits for occupational diseases has heretofore been applied only to silicosis, asbestosis, and other dust diseases, which are not covered by the Maine law. The New Mexico occupational-disease law is quite similar to the Colorado act and contains many of the same restrictions. It applies to employers of four or more, but does not include agricultural and domestic employees. The maximum compensation is fixed at $5,000 payable at the rate of $15 per week during disability and during dependency in death cases. An additional benefit of $1.50 per week

is allowed for each dependent child in death cases. There are special limitations in the case of silicosis and asbestosis. In Florida all occupational diseases are covered hereafter and the same benefits are paid as for an accidental injury, except in the case of silicosis and asbestosis. In such cases there is a progressive limited liability starting at $500 if death or disability occurred during June, 1945, with an increase of $50 for each succeeding month until the maximum for accidental injuries is reached. In a number of states specific provisions of laws relating to occupational diseases were amended. In Idaho the special limitation of $3,000 for death or total disability resulting from silicosis was removed. In Maryland and New Jersey additions were made to the lists of compensable occupational diseases. In Michigan the aggregate amount of compensation payable in the case of silicosis or other dust diseases was increased from $4,000 to $6,000. The Ohio law was changed to permit payment of compensation for silicosis when injury or death occurs within eight years (instead of two years) after the last injurious exposure, and to permit filing of claim within six months after diagnosis of silicosis by a licensed physician. In Utah the weekly compensation for occupational disease was increased from $12 to $16, but the additional benefits for dependents were eliminated in disability cases, and reduced from 10 to 5% of weekly benefits in death cases. The total benefits were increased from $3,000 to $5,000. Under the amended law the liability for silicosis is limited to $3,000 if disability or death occurred during July, 1945, with an increase of $50 for each succeeding month until a maximum of $5,000 is reached. The Illinois law increased disability and death benefits for injuries occurring after July 1, 1945, 20% over the present schedule (instead of 17½% as had been provided in the 1943 law). In Indiana compensation in death cases is payable for 350 weeks (instead of 300 weeks) if death occurred after April 1, 1945; weekly and aggregate benefits were also raised. In Pennsylvania increases were made for disability or death resulting from silicosis, anthracosilicosis, or asbestosis; for other occupational diseases benefits were increased on the same basis as under the workmen's compensation law. In West Virginia the silicosis fund was transferred to the workmen's compensation fund.

From *Monthly Labor Review*, January, 1946.

Placement of the Handicapped

Book Review by
HARVEY BARTLE, M.D.

JOB PLACEMENT OF THE PHYSICALLY HANDICAPPED, by CLARK D. BRIDGES, Director of Conservation Services, Zurich Insurance Companies; 330 pp., including Appendices and Index. McGraw-Hill Book Company, 330 West 42nd Street, New York 18, New York. Price $3.50.

THIS book is a timely response to a definite need in the placement of handicapped workers. It will facilitate and implement a service of this character in the crucial period in which so many persons returning from the Armed Forces require the considered judgment of those charged with placement responsibility. Writers of wide experience and understanding have written much on its various phases. Clark D. Bridges sensed the need of clarifying and conjoining into a composite, scientific and practical treatise the subject matter in its entirety. His logical approach, keen appreciation and observations, extensive experience, understanding, acumen and considered judgment have qualified him to crystallize in literary style and set forth the most modern concepts, ingenious scientific plans, techniques and realities in the placement of workers.

His comprehension of the medical and non-medical tasks involved is the real basis of his successful summating in one volume the broad coverage of "Job Placement of the Physically Handicapped." Its completeness is unique, its details are fascinating, its

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adaptability is interesting and most helpful and its accuracy is trustworthy. Its scope covers the hidden disabilities and visible disabilities; it describes fundamentals of physiology in their relation to work capacity, and successfully integrates into each topic the essence of safety and industrial health.

The major emphases have to do with physical capacity appraisal, a purely medical feature, and job analysis, a technical appraisal and delineation of a specific job. This is climaxed by a discussion and scheme of matching physical capacities with job analyses. This is developed skillfully, uniquely and definitely in a realistic manner with descriptive techniques and patterns which are to be tactfully controlled by experienced supervision, upon which the final success will depend. The medical compendium is a splendid compilation of information and suggestions to assist workers in the field to a clearer understanding and makes available a source of pertinent information. It is well advised, commendable and authoritative. The well-prepared list of references and dates is complete, a worthwhile aid to those who desire this service. The scope and completeness of the work are indicated by the chapter headings:

1. Handicaps to Employment.
2. Rehabilitation: Principles, Methods, Services.
3. Employment of the Disabled.
4. Appraising the Job.
5. Appraising the Worker.
6. Specific Disabilities: Anatomy, Physiology, Description, Placement Considerations:
   The Special Senses: Vision, Hearing.
   The Skeletal System and the Skin.
   The Respiratory System.
   The Circulatory System.
   The Gastro-intestinal System.
   The Genito-urinary System.
   The Nervous System.
   The Endocrine System.

Appendix:

A. Evaluation of the Severely Handicapped.
B. Available Services for Evaluation of Health Hazards of the Work Environment.
C. Maximum Allowable Concentrations of Industrial Atmospheric Contaminants.
D. Directory of the Principal National Voluntary Organizations Interested in Rehabilitation of the Handicapped.
E. War Manpower Commission Methods and Forms.
F. Specimen Pages from "Special Aids for Placing Navy Personnel in Civilian Jobs."
G. Rehabilitating Disabled Drivers.
H. Visual Standards for Operating Motor Vehicles.

Bibliography.
Visual Aids.

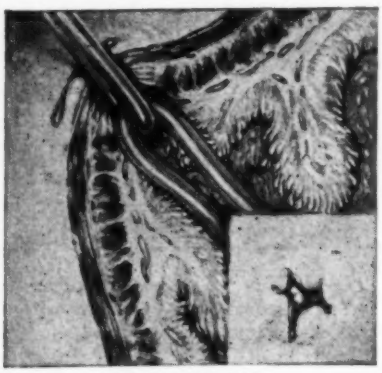
Throughout the book the author has handled the subject inimitably and masterfully, not leaving anything to conjecture. He points out vividly the way forward to a practical scientific solution of an intriguing problem in industrial placement of workers, full of socio-economic importance and human interest. And he acknowledges his indebtedness for medical guidance to the many physicians who gave him freely of their knowledge and experience.

We commend this practical scientific and authoritative book as the most advanced thought on the subject. The Zurich Insurance Companies very wisely sponsor this volume, giving to it a prestige by the endorsement which it certainly merits. Every industrial physician and personnel officer should have a copy. It will have a wide reading and will be generally accepted as a reference book.

CURRENT ARTICLES of QUALITY

Galvanized Iron Welding

T. E. P. GOCHER, M.D., "Symptoms Developed in Workers Cutting and Welding Galvanized Iron," in *Northwest Medicine*, 45:2, 102-104, February, 1946. Extract: "It has been found that welders and employees cutting galvanized iron frequently complain of a large number of symptoms from the fumes. Men working in the vicinity of the fumes also complain and often more than the welders. The fumes have been analyzed and found to contain zinc oxide chiefly, but zinc nitrate has also been found and in some instances lead oxide. The following is a list of complaints from the fumes that I have found. In the west, it was found lead was present from 1.6% to 1.8% of volume (solid in galvanized iron). In several plants, in which galvanized iron is being cut and welded, such as shipbuilding yards, there were a number of complaints. The employees complained of being sick at the stomach; they might vomit, have headaches, cramps in the abdomen, husky voice and cough, might even get rashes. It was peculiar that, in practically all cases given sodium



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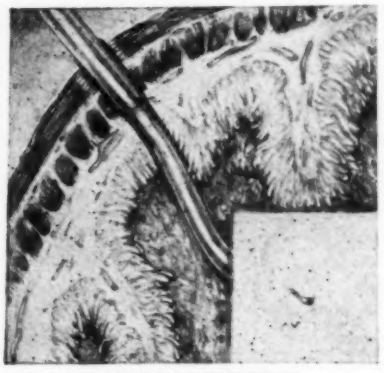

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bicarbonate, they became nauseated and vomited, but if bismuth was given, the stomach settled quickly and they felt better. A number of cases developed 'chills,' in which they had high fever, high pulse, flushing, sweating and felt very 'sick,' or metal fume fever. In many instances the throat was dry at first, then a cough developed. Most of the men got well in 24 or 48 hours. Some developed pharyngitis and laryngitis and also a few had bronchitis. The white cell and polymorph counts were high in the 'chills.' In some of these cases there was a delay from four to eight hours, then they developed hoarse voice, cough and the throat was quite painful. That is, the man would inhale fumes at first and have no symptoms, but that night he would feel sick, cough and the back of the throat would feel hot and tight, husky and raw. This would last from five to 10 days. They might be unable to talk the first night and the voice remained husky for several days. In examining another set of men who were doing the same work, it was found that they had nausea, anorexia, vomiting, headaches, and were light headed and feverish. There would also be perspiration, chills, dizziness and all foods would taste the same. They had an 'all in' feeling in the early evening, got out of breath easily and had a hoarse voice. The throat was red, sore and inflamed. If these men were to eat, they would vomit at once. They lost their liking for alcohol, found it difficult to eat and were usually off from ten to fourteen days. All food tasted the same. They might have rashes, cramps in abdomen. Sodium bicarbonate often made them worse. It was found that many cuts or lacerations, especially in the hands and arms, became infected and would become purulent in men doing this work. These took longer and were harder to cure than the normal lacerations. At first, good washing would prevent this condition, if it was known that galvanized iron caused the lacerations. It was interesting to note that in a series of blood work done on these cases, those who had chills and symptoms had an average count of 12,000 white cells, hemoglobin 82%, polys 71%, large-lymphs 13%, small lymphs 8%, and eosins 4%. No basos were found and large mono-nuclear cells were 2%. Red cells showed a slight variation in size, and stipple cells might go up to two per 2,000 red cells. In an average of men who had symptoms but no chills, it was found that the white count was 9,000, hemoglobin 81%, polys 65%, large lymphs 21%, small lymphs 7.5%, eosins 3.5%, basos 0.2%, large monos 2%. There was a variation in the red cells and stipples were usually below one per 2,000 cells. Exposure to the zinc fumes was the chief exposure in all cases. The average blood count of exposure cases was 8,100 white cells, hemoglobin 82%, polys 42%, large lymphs 40%, small lymphs 11%, eosins 3%, basos 0.3%; large monos were 2%. There was a slight variation in the red blood cells. The stipples averaged 0.3 per 2,000 red cells. I consider the diagnosis of these cases was zinc fume poisoning. I believe the zinc oxide was the cause of the gastro-intestinal symptoms. There is a possibility, but it has not been proved, that zinc nitrate was the cause of the respiratory tract symptoms, and zinc chloride of the rashes. Tests have shown that zinc nitrate is present in varying degrees, where cutting or welding occurs. It is also found that a small amount of nitrous fumes is present. It was peculiar that not all the cases exposed to zinc oxide developed severe or moderately severe respiratory tract symptoms. It was found that, when men were given fume-proof respirators that were of an approved type, and had good personal hygiene, they had full protection against these fumes. Certain respirators which are fume-proof could fit under the welder's hood and be used with great comfort. Care must be taken that fume-proof respirators are used and not any type; otherwise, the confidence of the man in the respirator will be greatly shaken, for not all respirators give protection against fumes. The above symptoms were an average of 140 known cases. Many of them were absent two or three days but in some cases were absent from work two to three weeks. This was usually in repeaters. Recently I found several cases of pneumonia which I believe were due to inhaling hot zinc fumes from welding, especially when the men had no protection. A peculiar fact about these fumes was that in a number of cases the men informed me they had colds in the head, but after inhaling these fumes they would be fully cured in a short time. In one shipyard, where an analysis of the air was made down in the hold, where welding and cutting was occurring, it was found that zinc oxide varied from 50 to 85 mg. of zinc and in one case over 200 mg. per cubic meter. Lead oxide was found from 5 to 10

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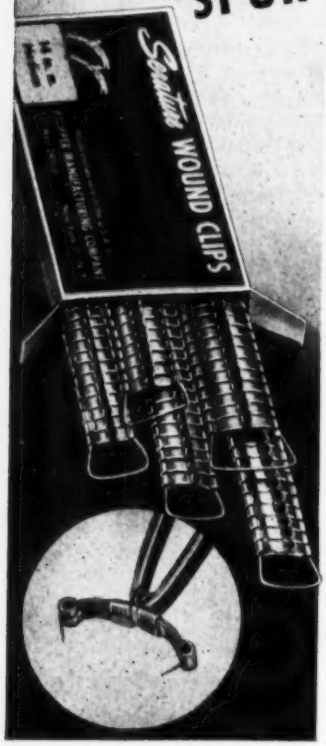

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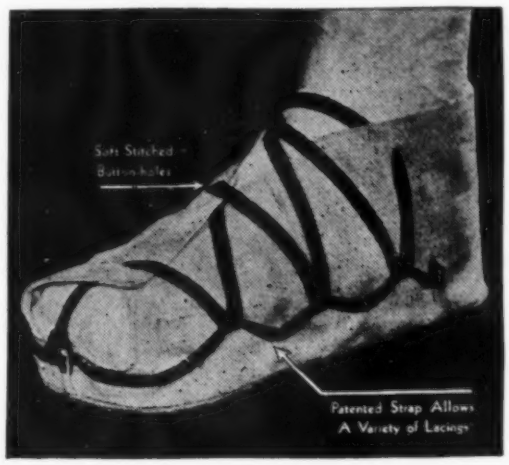
mg. of lead per cubic meter. No cadmium was found. In certain cases cadmium was being welded. Irritation of the respiratory tract and even edema of the lungs were found. Recently it has been brought to my attention that siderosis or pneumonoconiosis of the lung, caused by fine iron dust, may be present in these cases. I have found evidence of this condition in an increased lung fibrosis after six to eight months' exposure. In no case was it disabling or caused any apparent symptoms."

Company Relationships

C. O. SAPPINGTON, M.D., DR. P. H., "Industrial Health Department Functions and Relationships," in *Transactions, Medical and Engineering Section*, Tenth Annual Meeting, Industrial Hygiene Foundation, Bulletin No. 6. Extract: "For quite some time there have been varying differences of opinion as to the results occurring when the chief physician or medical director reports to the industrial relations division or officer, as compared with the effects which result when the same medical officers report to top management. There are those who believe that top management should be primarily interested in good health for employees and take an active interest in the health program, while others believe that good results may be secured by going through other divisions rather than to top management. Perhaps much depends upon the type of men to whom the reporting is done and their active interest and cooperation; perhaps also a great deal of the success attained depends upon reliance and confidence being placed in medical leadership, with as little management interference as possible. Apparently good results have been obtained from both methods, although there are those who feel that from a strong organization point of view, reporting to top management is to be preferred. Incomplete data available up to the present time show the percentage of these relationships in the following: Reporting to top management, 61%; health department has final word, 77%; industrial relations, health, safety on a par, 66%. It can thus be seen that more than one-half of the establishments contacted up to the present time show medical and health departments reporting to top management; the majority of instances show that the health department has the final word on health problems, and relatively the same percentage of relationship is true for industrial relations, health and safety divisions being on a par administratively. Experience has also indicated that because of the limited number of physicians available to industry during the war emergency, there was considerable need for depending on lay technical assistants and upon nurses to the extent that industrial physicians learned much about administration. This has proved to be advantageous, because it made industrial health administration more similar to other industrial practices or procedures. However, it may not prove to be so beneficial, because too much relegation of medical functions to others than physicians may be carried over into peacetime practice and result in a deterioration in the quality of the service. This may be the reason why even among the 'higher-ups' there is a feeling that the less interference with the technical functions of the health department, the better it can be administered. All manner of variations in medical department administration have been encountered in this survey thus far. There have been instances where the department reports to a personnel committee instead of to one person; to a service officer, a layman; and other instances of reporting to a general manager by way of the medical director who is chief of the service. In one establishment, of long standing, it was found that the medical director's name has appeared, for the first time in the history of the organization, with the other officers of the company. It is too early to say that this may or may not be a trend, but the occurrence may be interpreted in various ways: it certainly seems wise that top management should know at first hand the problems of medical and health services, and that these be discussed directly with top management; it seems wise also that the medical director



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should have administrative touch with top management and appreciate more intelligently the problems of management. To this end, such an association seems advisable and advantageous. There are, however, a great many who believe that the medical officer should neither be management nor labor, but should represent an intelligent liaison between them, which by the very nature of the functions of the medical officer in his department seems an intelligent classification. This subject will meet with further discussion and consideration during the continuation and completion of this survey."

"Dead Hand"

DEAD Hand" in Users of Vibrating Tools. E. D. Telford, M. B. McCann and D. H. MacCormack. *Lancet*, 2, 359-360 (September 22, 1945). II. "Dead Hand" (Correspondence) G. WHITWELL. *Lancet*, 449 (October 6, 1945). From *Bull. Hyg.* abstr. in *Industrial Hygiene Digest*, March, 1946: I. The author encountered 75 patients with vascular disturbances in a hand-out of 300 workers who polish or cut metal with a tool turning at a speed of 2,900 revolutions per minute. Usually, the only hand affected was the left, which was used to guide the tool and to apply it firmly. These disturbances occurred on rising in the morning, were usually absent during working hours in the warm factory and occurred again when the worker left the factory for the open air. The trouble begins with sudden blanching and deadness of one or more fingers; the thumb is not affected. After a variable interval a deep cyanosis follows and later the cyanotic area becomes mottled with salmon colored patches, which gradually spread and coalesce. The duration of the attack varies from a few minutes to several hours. The latent period between taking up work and the appearance of the phenomenon varied from six to 40 months, with an average of 27 months. The condition may persist after the worker has given up using the vibrating tool. Factors in producing the disorder are apparently rate of revolution of the tool and hardness of the metal dealt with. Cutters must be kept sharp. The best prophylaxis is stated to be change of occupation after not more than nine months' use of the tool. Avoidance of cold is advised but is often impossible under local climate conditions. The authors believe that the pathological lesion is a degenerative change in the walls of the digital arteries, possibly as a result of damage to the vasa vasorum by the vibrating tool. II. Whitwell states additional factors as far as the tool is concerned.

Raynaud's Phenomenon

RAYNAUD'S Phenomenon in Riveters. T. Lindquist and T. Flemberg. *Acta Med. Scandinavica*, 120, 309-318 (1945). From *Bull. Hyg.* abstr. in *Industrial Hygiene Digest*, March, 1946: This paper is concerned only with circulatory disturbances caused by working with tools operated by compressed air. Three riveters and seven assistants were exposed to vibrations from the pneumatic tools. The riveters' hands were also exposed to cold air played on the tool to prevent overheating, but the assistants' hands were subjected to heat from the metal. The symptoms were similar and typical in all; there were stiffness, numbness, sensation of cold and blanching, and in many cases, aching pain in the fingers. In some cases the symptoms appeared only during work, in others they appeared also on exposure to cold when not at work. The interval between starting this work and the first appearance of symptoms varied from seven to 26 years, the average being 17 years. As a result of studies to distinguish between spasmodic and structural disorders of the arteries the authors conclude that there was no reason to think that the work had caused structural changes in the arteries.

Industrial Lung Diseases

DISCUSSION of Modern Conceptions of Industrial Lung Diseases. *Proc. Roy. Soc. Med.*, 38, 519-534 (July, 1945). Abstr. from *J.I.H. & T.*, in *Industrial Hygiene Digest*, March, 1946: A panel discussion on indus-

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trial lung diseases is reported. First is the development of radiographic diagnosis of industrial pneumoconiosis. Exposure to dusts containing silicates, or other substances, with some free silica, produces effects differing from those of free silica. Linear striation or increased arborization by x-ray seems to be the precursor of the classic nodular silicosis; the major factor in prognosis of silicosis is still the presence or development of tuberculosis. Coal miners pneumoconiosis has increased in frequency and is now compensable. The clinical significance of reticulation, seen in the early stage of this disease, is still doubtful. The advanced stage may correspond to classical silicosis. Radio-opaque metallic dusts cause a fibrosis which has no clinical significance until there is associated silicosis. Hematite causes a reticulation persisting long after exposure has ceased; a more advanced state of apparent nodulation is difficult to distinguish from miliary tuberculosis, secondary carcinomatosis, and penicillium infection. However, it has been shown by chemical analysis and contact x-rays that the reticulation in hematite miners is due only to the hematite dust, and not to fibrosis, that large-size nodulation occurs only in the presence of tuberculosis, and that any fibrosis in the lungs of hematite miners is not related to the total amount of silica or hematite in the lungs.

Nutrition

NUTRITION in Preventive and Industrial Medicine. I. C. Riggin. *Virginia Med. Monthly*, 72, 247 (September, 1945). Abstr. from *J.I.H.&T.* in *Industrial Hygiene Digest*, March, 1946: The correction of the high percentage of inadequate diets among industrial workers will do much to prevent accidents and to increase efficiency. The administration of added vitamins, calories, and minerals is advised in certain types of exposures. Improved lunch room menus, attention to the nutritional education of workers, and increased awareness by the physician of nutritional deficiency diseases and their symptoms are suggested in order to meet and solve the problem which is described.

Methionine and Tetrachloride

EFFECT of Methionine Supplements on Hepatic Injury Produced by Tetrachloride; V. A. Drill and T. A. Loomis; *Science*, 103, 199-201 (February 15, 1946). Abstr. from *Industrial Hygiene Digest*, March, 1946: Liver damage was produced by administering small doses of carbon tetrachloride, mixed with corn oil, by stomach tube, to healthy, adult dogs. Changes in hepatic function were studied by means of the bromsulfalein and serum phosphatase tests. The dogs were fed a synthetic diet containing either 41% or 20% of casein, the latter being at the lower level of protein intake. In both groups of animals, methionine supplements did not decrease the degree of hepatic damage produced by carbon tetrachloride as judged by serium phosphatase values or bromosulfalein retention. Other investigators had shown that methionine is beneficial after protein deficient diets. Therefore, its value in decreasing liver damage from carbon tetrachloride and similar materials is limited to cases of protein deficiency.

Placement of the Blind

PLACEMENT of the Blind in Industry; Hazel Hurst; *Trans. Am. Acad. Ophth. & Otolaryng.*, 49th mtg. p. 310. (May-June, 1945). Abstr. from *Am. J. Ophth.* in *Industrial Hygiene Digest*, March, 1946: The author, who is blind, conducts a school for the visually handicapped in which placement of the blind in industry is emphasized, and 375 of the students have been placed in various industrial plants during the past three years. A guide dog is kept at the employee's bench during the eight-hour shift, especially to avoid confusion in case of emergency. The author feels that a regular periodic check-up of ocular condition and general health should be made on all sightless employees. Their record for attendance and willingness to work is excellent, and there is less absenteeism among the blind than among those with sight.

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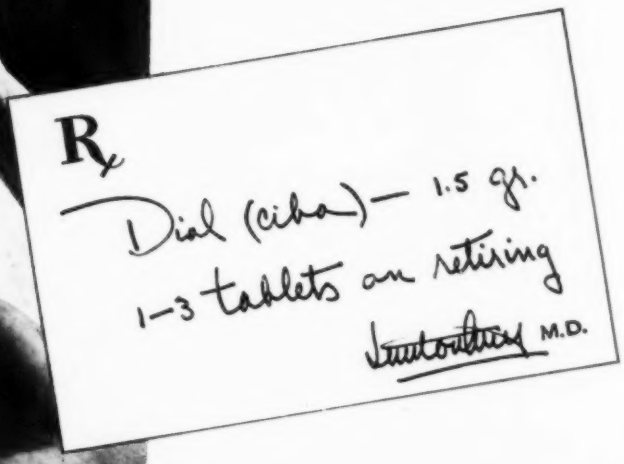

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